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The

MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR

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VOLUME X

NEUROPSYCHIATRY

IN THE UNITED STATES

BY

COL. PEARCE BAILEY, M. C.
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IN THE AMERICAN EXPEDITIONARY FORCES

BY

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PREPARED UNDER THE DIRECTION OF
MAJ. GEN. M. W. IRELAND

The Surgeon General

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LETTER OF TRANSMISSION

I have the honor to submit herewith Volume X of the history of the MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR. The volume submitted is entitled, "NEUROPSYCHIATRY."

M. W. IRELAND,

Major General, the Surgeon General.

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^a The highest rank held during the World War has been used in the case of each officer.

PREFACE ^a

The subject matter of this volume is divided into two sections, the one dealing with neuropsychiatry in the United States; the other, with neuropsychiatry in the American Expeditionary Forces. This division naturally follows the differences which obtained in administering the neuropsychiatric service in both places, as well as the class of cases, generally speaking, with which the neuropsychiatrists had to deal.

The section of neuropsychiatry in the United States was quite largely prepared by Col. Pearce Bailey, M. C., who during the year preceding his untimely death^b gave a large proportion of his time to a careful study of the records of the division of neurology and psychiatry in the Surgeon General's Office. His material was completed and edited by Lieut. Col. Frankwood E. Williams, M. C., who was Colonel Bailey's chief assistant during the war, and Sergt. Paul O. Komora, M. D., who served in the offices of both Colonel Bailey in the United States and Colonel Salmon in the American Expeditionary Forces.

In the preparation of Chapters V and VI, material furnished by a number of neuropsychiatric officers was freely used. Mention is particularly made of the reports of Maj. A. J. Rosanoff, M. C., who was chief of neuropsychiatric service of the special hospital for war neuroses at Plattsburg, N. Y.; of Capt. Earl D. Bond, M. C., who was in charge of the neuropsychiatric activities in connection with the embarkation and debarkation of troops at Newport News, Va.; of Capt. Sylvester R. Leahy, M. C., who assisted in similar work at the port of Hoboken; and of Maj. Herman M. Adler, M. C., who made a special study of disciplinary problems in the Army in the United States.

In the preparation of Chapter IX jointly by Col. Pearce Bailey, M. C., and Capt. Roy Haber, S. C., who was on duty in the division of neurology and psychiatry, Surgeon General's Office, assistance in the editing of this chapter for statistical style and accuracy was given by Dr. Horatio M. Pollock and Miss Edith M. Furbush, statisticians, respectively, of the New York State Department of Mental Hygiene (formerly the New York State Hospital Commission) and the National Committee for Mental Hygiene.

This is the first time in the history of the country that it has been possible to study statistically such quantity of data in regard to neuropsychiatric disorders. Special study of neuropsychiatry had not reached an advanced stage during the Civil War, and the medical and surgical history of that war contains no discussion of this class of diseases. Such medico-military sta-

^a For the purposes of the History of the Medical Department of the United States Army in the World War, the period of war activities extends from Apr. 6, 1917, to Dec. 31, 1919. In the professional volumes, however, in which are recorded the medical and surgical aspects of the conflict as applied to the actual care of the sick and wounded, this period is extended, in some instances, to the time of the completion of the history of the given service. In this way only can the results of the methods employed be followed to their logical conclusion.

^b Deceased Feb. 11, 1922.

tistics as had been compiled since that time have related only to a comparatively few men who had volunteered for military service.

Previous statistical studies have necessarily been confined to the records of various civilian institutions. These have not been possible on any large scale because of the lack of a uniform method of recording data in the various States and even in the several hospitals of the same State. Such studies have also lacked completeness for the reason that no State has made adequate institutional provision for mental diseases and practically no provision has been made at all for those who do not fall in the category of insanity. Therefore, individuals with psychoneuroses, constitutional psychopathic states, and the like have appeared only seldom in civil statistics.

The information obtained from this study will be of value to the Medical Department of the Army, in the event of future wars, in helping to make a correct estimate of the percentage of nervous and mental disabilities existing in the group of citizens liable for military service, and in estimating to what extent these conditions may be found among citizens of the different States and among people of different races and nationalities. Furthermore, authentic data will be available from which to fix definite standards of rejection for those examined at the time of entrance to the military service, and estimates can be made as to the different types of nervous diseases which will develop in the Army.

The degree to which neuropsychiatric defects were shown to prevail was unexpectedly large. The great predominance of those little understood conduct disorders embraced under the clinical classifications of psychoneuroses and constitutional psychopathic states was particularly surprising. It had always been believed that the psychoneuroses were the important forms of neuropsychiatric disorder, but from a study of the Army neuropsychiatric examinations it must be concluded that the psychoneuroses greatly surpass them in numbers. Hitherto these conditions have not been regarded socially as serious, but in the future it is apparent that every effort must be made by all citizens interested in the welfare of the country to salvage this great class of people in order that the man power of the country may be maintained at its maximum, as well as for other economic reasons.

In the preparation of Section II of this volume, the editor, Col. Thomas W. Salmon, M. C.,^c who was senior consultant in neuropsychiatry, A. E. F., was assisted by Sergt. Norman Fenton, M. D., who served during the World War as assistant in psychology at Base Hospital No. 117, A. E. F. (the special hospital for war neuroses), and who for several years after the war was engaged in a noteworthy study of the subsequent histories of men who had suffered with neuropsychiatric conditions in the Army.

The effects of modern war upon the human mechanism have bearings upon problems of health nearly as important in some of their practical aspects now that the war is over, as when the success of the war itself depended upon the preservation of the health and morale of troops at their highest possible level. In the belief that it might be useful and at the same time not detract from the value of this volume as a record of events, the relation that methods of management of the war neuroses and of mental disorders in the American

^c Deceased Aug. 13, 1927.

Expeditionary Forces bear to the solution of problems of mental health in civil populations has been commented upon from time to time.

While the actual neuropsychiatric work in the American Expeditionary Forces covered many different fields, there was, in almost every instance, an individual officer who was more directly responsible than anyone else for a particular activity or more fully informed regarding it. Therefore, the main divisions of neuropsychiatric activities are dealt with in separate chapters prepared in most cases by the officer who came in most intimate contact with the work described. As director of psychiatry and later senior consultant in neuropsychiatry, the editor of this section had an unusual opportunity to view the neuropsychiatric work as a whole. For this reason, accounts of the general conceptions upon which neuropsychiatric plans were based, the general narrative and an account of the administrative mechanism by which the work was conducted, as well as an evaluation of the results and the significance of what was accomplished have been contributed by the editor.

The account of neuropsychiatry in divisions, corps, and armies, in Chapter II of this section, was prepared by Lieut. Col. Edwin G. Zabriskie, M. C., consultant in neuropsychiatry in the 3d Division, 3d and 5th Corps, and First Army; Lieut. Col. John H. W. Rhein, M. C.,^d who at different times was consultant in neuropsychiatry with the Second Army and commanding officer of Neurological Hospital No. 1; Maj. Edward A. Strecker, M. C., Maj. Samuel Leopold, M. C., Maj. Mortimer W. Raynor, M. C., and Capt. Harry A. Steckel, M. C., who served as division psychiatrists in the 28th, 4th, 79th, and 26th Divisions, respectively. Chapter III, which deals with the army neurological hospitals, was prepared by Lieut. Col. John H. W. Rhein, M. C., and Maj. Roscoe W. Hall, M. C. Chapter IV, dealing with the special base hospital for war neuroses at La Fauche (Base Hospital No. 117), was prepared by Lieut. Col. Frederick W. Parsons, M. C., commanding officer of that unit. Chapter V was prepared by Maj. Sidney I. Schwab, M. C., medical director of this hospital, and Sergt. Norman Fenton, M. D., who also prepared the bibliography and made the study of a group of discharged men who had war neuroses. Chapter VI was prepared by Lieut. Col. Michael W. Thornton, M. C. (section on psychiatric collection station), and Lieut. Col. Sanger Brown, II, M. C. (history of Base Hospital No. 214). Chapter VII, dealing with neuropsychiatry in the army of occupation, was prepared by Maj. Samuel W. Hamilton, M. C. (who was consultant in neuropsychiatry for the Third Army).

It is impossible to give full credit for all the other assistance given in the preparation of this volume, for many officers have contributed their own observations and data.

^d Deceased.

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SECTION I

IN THE UNITED STATES

INTRODUCTION

Before the United States entered the World War, the attention of both the American medical profession and the public had been attracted by the prevalence of some apparently new types of mental reactions under the stress of actual campaign. From the earliest days of the fighting at Mons, stories had come to the United States of strange new diseases apparently having their origin in the stress and special horrors of modern warfare and presenting problems in treatment and prevention that baffled the medical organizations of the armies that later were to become our allies. After making all possible allowances for exaggeration and highly colored lay reports of technical and medical matters, it was apparent that some new medical problems had arisen in connection with the reactions of the central nervous system to the new conditions of warfare. It was also apparent that a new type of casualty which might threaten most seriously the manpower of armies existed in the inability of human beings to stand more than a certain amount of exposure to the effects of high explosives, even though they escaped bodily injury. For these reasons the first published reports on the neurological and psychiatric aspects of the war were eagerly read by neurologists and psychiatrists in the United States who realized, even then, that the time might very soon come when they would be dealing with the same problems in troops serving under their own flag.

The first impression to receive confirmation by reports from the scene of conflict was that relating to the increased incidence of mental disorders occasioned by war. It had been observed that not only in actual war but even in peaceful mobilization, such as that of our own Army along the Mexican border in 1916, there was a higher rate of mental disease among soldiers than in civil life. The discharge rate for mental diseases in the United States Army in 1916 was three times the admission rate for these disorders in the adult male population of the State of New York, one-tenth of all discharges for disability being for mental diseases, mental deficiency, epilepsy, and the neuroses.¹ Out of a group of 1,069 enlisted men discharged from the United States Army in 1912 on account of disability from all causes, more than 200, or practically 20 per cent, were found to be mentally diseased or defective during the year.²

Among the reasons adduced for the excessive prevalence of insanity among soldiers, the peculiar kind of stress which military life imposes upon psychopathic individuals was considered the most important. Many people are able to make satisfactory adjustments to life only with the greatest difficulty and under exceptionally favorable circumstances. On account of certain inadequacies of character or personality, life presents to them complexities of which their fellow men are unaware. By means of fortunate changes in their en-

vironment, opportune withdrawals from difficult situations, and many other expedients not required by most people, individuals with serious defects in adaptation manage to get along in civil life with fair success. Others, who are able to make adjustments that are only partially successful, escape serious mishaps through a lot of charitable allowances on the part of persons with whom they come in contact and the support of these persons in critical situations. In military life such aid is lacking. The individual who, with much assistance, only barely succeeds in making satisfactory adjustments, is here thrown upon his own meager resources. All kinds of personalities, some of them just able to adapt themselves to life under the best of conditions, must fit into the one iron mold which experience has shown to be best for the stern business of war. The result is a heavy incidence of those varieties of mental shipwreck that we call psychoses and neuroses, and the merciless disclosure of a large number of constitutionally inferior individuals.¹

While it was assumed that with actual fighting the rate for mental disease rose sharply, what impressed American neurologists and psychiatrists most was the extraordinary prevalence of the neuroses,—functional nervous conditions that came to be known chiefly as “shell-shock,” from the apparent association of these conditions with the high explosives used in battle. Accounts reached this country of the queer aura of symptoms that characterized these cases, and many and varied were the interpretations advanced in the early reports in explanation of the phenomena of “shell-shock,” so little understood at the time. There were descriptions of cases with staring eyes, violent tremors, a look of terror, and blue, cold extremities. Some were deaf and some were dumb; others were blind or paralyzed. In general, these conditions were associated with the central nervous system and the shock of exposure to the strain of battle under new conditions of warfare.

There was much difference of opinion as to whether the causes of “shell-shock” were mainly physical or mental. Some were inclined to look for injuries to the central nervous system as the chief explanation for the production of this condition, others claimed that the disorder was mostly psychological. It was recognized that the appearance of neurological symptoms in certain cases could be accounted for by the physical effects of shell explosion, even without external injury. But there was considerable controversy about that group of “shell-shock” cases among patients exposed to shell fire in whom there may or may not have been damage to the central nervous system but whose symptoms were those of neuroses familiar in civil practice, colored in a distinctive way by the precipitating cause.¹ Mott included them in his group of “injuries of the central nervous system without visible injury,” holding that some unknown physical or chemical change must underlie such striking disabilities.³ Wiltshire gave less weight to the factor of physical damage, though still recognizing its existence, and put the emphasis upon psychologic factors in his explanation of the phenomenon.⁴

There was common agreement upon one point, however, and that was the importance of the constitutional make-up of the individual exposed to shell fire as a contributing factor in shell-shock.

Numerous observers at the front and in home hospitals noted the absence of "shell-shock" among the wounded. "Among scores of Canadian soldiers returned with severe head injuries," according to Farrar, "most of them shrapnel and gunshot wounds with loss of portions of the skull, symptoms of psychosis or traumatic neurosis have practically never been observed * * * trench neuroses occur usually in unwounded soldiers."⁵

The frequency of mental and nervous affections was remarked by medical writers in every combatant nation, and all agreed that the terrible conditions of modern warfare, with its new methods of fighting—high explosives, liquid fire, tanks, poison gas, bombing planes, the "warfare of attrition" in the trenches—contributed to the creation of a novel disease entity. At first called "shell-shock," this disease came gradually to be recognized as "war neurosis," a condition very similar to the neuroses of civil life, but highly colored by the terrifying influences of new conditions of combat. An American observer wrote that "the present war is the first in which * * * the functional nervous diseases ('shell-shock') have constituted a major medico-military problem. As every nation and race engaged is suffering from the symptoms, it is apparent that new conditions of warfare are chiefly responsible for their prevalence."¹

The Russians, in their war with the Japanese, developed the first army medical service in which mental cases were treated by specialists, both at the front and upon return to home territory;⁶ but this service was primarily for insane soldiers, the functional neuroses not being especially significant. It is possible that the neuroses may not have been distinguished from the psychoses in previous wars. However, Read, who made a very careful study of the problem, had this to say: "* * * war neurotic states have an intimate relationship with the conditions under which this great war was fought—the enormously high explosives, special trench warfare, poison gases, and horrors that were not present to any extent in previous wars. It is stated that no war neuroses were observed in the Boer War, where the methods were so different, but some traces were seen in the Russo-Japanese War."⁷ Though none of the symptomatic expressions of war neurosis were considered new, all having been noted by the military surgeons in previous wars, still the great frequency of their occurrence in the World War was a decided novelty to war-time medical experience.

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CHAPTER I

ORGANIZATION

PRELIMINARY PLANS UPON WHICH TO BASE ORGANIZATION

During the first few months of 1917 it was apparent to the Surgeon General that the Medical Department of the Army was soon to be called upon to assume the performance of enormous tasks, many of them quite unrelated to military duties in time of peace, or even to the latest campaigns in which the United States Army had taken part. In other volumes of this history are to be found accounts of the methods by which plans were made for the mobilization of the medical, sanitary, and nursing resources of the country. Similar preparations were not lacking in the field of neuropsychiatry. Having in mind the desirability of being prepared at the earliest possible moment to deal with the new and formidable problem of war neuroses, the Surgeon General, in March, 1917, invited a committee of civilian neuropsychiatrists ^a to Washington, for a conference on the subject.¹ This committee was part of a larger group, formed by the National Committee for Mental Hygiene, for the purpose of studying the possible neuropsychiatric needs of the United States Army in the event of our country's entry into the war. Appreciating the importance of mental disorders as a medico-military problem, and aware of the magnitude of this problem among European armies, this group was already at work laying plans for one or more psychiatric hospital units to be placed at the disposal of the United States Government when needed.

ON THE MEXICAN BORDER

As a result of the Washington conference the Surgeon General requested the committee to visit the Army camps on the Mexican border to study the provisions made in the United States Army, as then constituted, for the diagnosis of, and the care and treatment of soldiers suffering from, mental diseases.² A careful study was made of the whole situation, including inspections of the larger military hospitals at San Antonio and El Paso, Tex., and the military prison at Fort Leavenworth, Kans.

The committee was impressed with the high incidence of mental diseases in the Army. These diseases were found to be approximately three times as prevalent among the troops on the Mexican border during the previous summer as, for example, among the civil population of the State of New York.² The committee noted also the uniformly high standard which characterized provisions for the diagnosis and treatment of physical disorders in the base hospitals visited, in contrast with the meager provisions for the care of the mentally

^a Dr. Stewart Paton, of Princeton University; the late Dr. Pearce Bailey, of the Neurological Institute, New York City; and the late Dr. Thomas W. Salmon, the medical director of the National Committee for Mental Hygiene.

ill. It was apparent that special provisions would have to be made to meet adequately the needs that would arise with the participation of the United States in the European conflict.

In its report to the Surgeon General (see appendix, p. 491) the committee outlined a plan for a central psychiatric unit of 110 beds to be established in connection with base hospitals near the largest concentration of troops, and a 30-bed unit for base hospitals elsewhere. It was recommended that such units be integral parts of military hospitals and that the psychiatrists and neurologists in charge of them be medical officers of the Army. Diagrams of these units, with a description of buildings, equipment, and personnel, were submitted. The usefulness of a psychiatric service was pointed out in connection with the handling of disciplinary cases, malingering, and other behavior problems among the troops. Such a service was deemed to be indispensable to the morale of a modern fighting organization.

IN CANADA

In May, 1917, a member of this committee ^b made a trip to Canada in quest of information concerning the management of the numerous problems arising out of the presence of mental and nervous disorders among soldiers. It was believed that valuable lessons could be learned from Canadian experience with neuropsychiatric cases, particularly in view of the similarity in geographical situation between the United States and Canada with regard to the scene of war. The transportation of bodies of troops over the seas presented similar difficulties, and the same problems arising in connection with the reception, classification, and distribution of those invalidated home would have to be met by our own Army.

Evidence of strong neuropathic trends or mental diseases was found in many of the medical histories of returned Canadian soldiers. The predisposition to nervous and mental diseases or the actual existence of these conditions in slight degree, while readily and quickly demonstrable by a physician accustomed to look for them, usually passed unnoticed by the surgeon. Yet the frequency with which these disorders occurred, and the certainty of their disabling character, made the enlistment of men so affected a direct blow at the efficiency of the Army and a source of unnecessary expense to the Government and hardship to the soldier. In his report to the Surgeon General ³ the member of the committee emphasized the importance of this phase of recruiting and recommended the assignment of medical officers of the proposed base hospital psychiatric units to duty at Army camps during mobilization.

Another member of the committee ^c about the same time, visited Quebec, to observe conditions among returned Canadian soldiers at the discharge depot there. In his report to the Surgeon General ⁴ he noted certain dispositions existing in each patient prior to enlistment which, under the stress of war conditions, were particularly favorable for the development of nervous and mental symptoms, and suggested that it should not be a matter of great difficulty to eliminate from the service, in advance, a large proportion of the cases returned

^b Dr. Pearce Bailey.

^c Dr. Stuart Paton.

as "nervous and mental disorders." He also stressed the importance of bringing any psychological work in the Army into close union with the activities of the Medical Department, and described the great variety of the nervous and mental disorders found among the returned soldiers.

IN ENGLAND

In June, 1917, a member of the committee,^d through the cooperation of the Rockefeller Foundation, was sent to England to secure, first hand, the most recent information as to the British and French methods of dealing with war neuroses in and near the theater of operations, to make observations on these methods, and to confer with medical officers in the British War Office. His report to the Surgeon General⁵ (see appendix, p. 497) confirmed observations and impressions of other members of the committee concerning neuropsychiatric conditions in the Canadian Army, and contained data that proved of great value in the preparation of plans for dealing with the problem of mental and nervous diseases in the United States Army, abroad and at home. The high rate of mental disorders in the British Army (one-seventh of all discharges for disability had been due to mental conditions), the difficulties in which the Allies found themselves as a result of failure to prepare adequately for the management of mental and nervous cases developing in combat, and the great problem created by the acceptance of large numbers of recruits who had been in institutions for the insane or were of demonstrably psychopathic make-up—these and other significant observations were among the most important factors determining the course of American medico-military preparations.

The foremost recommendation contained in this report called for rigid exclusion of all insane, feeble-minded, psychopathic, and neuropathic individuals from the forces which were to be sent to France and exposed to the terrific stress of modern war. Not only medical officers, but the line officers interviewed in England, had emphasized over and over again the importance of not accepting mentally unstable recruits for service at the front. As a result of these observations, it was believed to be within the power of the United States Army, by the adoption of an exclusion policy, to reduce very materially the difficult problem of caring for mental and nervous cases in France, to increase the military efficiency of the expeditionary forces, and to save the country millions of dollars in pensions.

The next most important lesson learned was that of preparing, in advance of urgent need, a comprehensive plan for establishing special military hospitals for mental diseases. Here, again, it was declared that the United States could profit vastly by the experience of its allies by having at the disposal of the Army, before it began to sustain mental and nervous casualties, a personnel of specially trained medical officers, nurses, and civilian assistants, and an efficient mechanism for treating these disorders in France, evacuating them to home territory, and continuing their treatment, when necessary, in the United States.

It was estimated that the annual rate of admissions of mental and nervous cases to British military hospitals at the time of this observer's visit was about

^d Dr. Thomas W. Salmon.

2 per 1,000 among the nonexpeditionary troops and about 4 per 1,000 among expeditionary troops, compared with a rate of 1 per 1,000 among the adult civil population of Great Britain. The greatest problem, however, both from the standpoint of the welfare of the individual soldier and of military morale, was that presented by the excessive incidence of war neurosis, a problem which proved to be most serious for all of the allied armies. Of 200,000 soldiers on the pension list of England, it was found that one-fifth were suffering from this condition.

Among the chief recommendations resulting from this study were: (1) The establishment overseas of special base hospitals of 500 beds for neuropsychiatric cases, and convalescent camps in connection with these hospitals in the base sections of the line of communications; (2) the provision of special neuropsychiatric wards of 30 beds for the observation and emergency treatment of mental and nervous cases in base hospitals in the advance section of the line of communications; (3) the assignment of psychiatrists and neurologists from these wards to evacuation hospitals and more advanced stations as opportunities permitted.

For the United States the following recommendations were made: (1) The provision of clearing hospitals, and clearing wards in general hospitals for the reception, emergency treatment, classification, and disposition of mental cases among enlisted men and officers invalided home; (2) legislation enabling the Surgeon General to contract with public and private hospitals for the continued care of mental cases prior to discharge; (3) the establishment of reconstruction centers and special convalescent camps for the treatment and reeducation of returned soldiers suffering from war neuroses; (4) the appointment of a special medical board to inspect all Government hospitals and reconstruction centers, public and private institutions caring for mentally disabled officers and enlisted men. Descriptive plans for hospital personnel and equipment, together with a diagram showing the scheme of care of the disabled soldier from the field hospitals at the front to his return home, accompanied the report.

A concluding observation described the changing point of view in England and France, brought about by the war, with regard to mental and nervous diseases in civil as well as in military life. Whereas mental illness had been almost wholly ignored and the medical advances before the war dealt almost exclusively with physical diseases, the wide prevalence of the neuroses among soldiers was apparently leading to a revision of the medical and popular attitude toward mental and functional nervous diseases, and stimulating widespread interest in their observation and study.

APPROVED PLANS

The report of the observations on the Mexican border was promptly accepted and the plans suggested were approved by the Surgeon General, who authorized the National Committee for Mental Hygiene⁶ to proceed at once with the organization of the neuropsychiatric units recommended.¹ To this end there was formed the Committee on Furnishing Hospital Units for Nervous

⁶ The origin and work of the National Committee for Mental Hygiene are described in "A Mind That Found Itself," an autobiography, by Clifford W. Beers. Doubleday, Page & Co., New York.

and Mental Disorders for the United States Government,^f composed of representative neurologists and psychiatrists from various parts of the country. The American Medico-Psychological Association (now the American Psychiatric Association) appointed a member of the association in each State to work with this committee. The American Neurological Association and the American Psychological Association also appointed special committees to cooperate with the National Committee for Mental Hygiene. In Massachusetts the committee for war work in neurology and psychiatry was appointed by the governor with a view of organizing a neuropsychiatric hospital unit of its own for the use of the Government and to cooperate with the National Committee for Mental Hygiene. Soon it became evident that the problem of organizing and equipping hospital units would be but one of a number of problems that would have to be considered, so that the Committee on Furnishing Hospital Units for Nervous and Mental Disorders for the United States Government widened the scope of its activities and changed its name to War Work Committee, making provision at the same time for subcommittees for the study of particular problems.

On the authority of the Surgeon General¹ the War Work Committee early set about securing for the Medical Department a special personnel, circularizing the medical profession and special hospitals for this purpose. There were received in all 795 applications for commission in the Medical Reserve Corps. After considering the special fitness of the applicants, the papers were forwarded to the Surgeon General, with indications as to the aptitude of the candidates, and with recommendations as to rank, based on professional standing.⁶ Commissions were granted to 564 such applicants.

The committee also, in much the same manner, secured the names of nurses and attendants, and cooperated with the Surgeon General in regard to their induction into the service.

It was from plans drawn by this committee that the type of neuropsychiatric pavilion for the camps was decided on.¹ The committee also distributed special literature and, in some instances, equipment to the neuropsychiatric units and officers. It contributed \$2,500 to enable a committee of psychologists to continue the investigations which resulted in the psychological tests later adopted by the Medical Department of the Army.^g

As the war proceeded, the committee continued to cooperate with the division of neurology and psychiatry of the Office of the Surgeon General and with the civil community. It assisted in making the arrangements by which recruits who became insane prior to or immediately after enlistment would be cared for by their own States; prepared a classified list of State hospitals, showing their standards, medical personnel, and methods of treatment and care of patients; and throughout the war helped in the solution of various professional problems which confronted the Surgeon General.

^f The work of this committee was first made possible through a generous gift made by Miss Anne Thompson, of Philadelphia. Later it was financed by the Rockefeller Foundation.

^g *Memoirs of the National Academy of Sciences*, Vol. XV. Psychological Examination in the United States Army. Part I. History and Organization of Psychological Examining and the Materials of Examination. Part II. Methods of Examining: History, and Development, Preliminary Results. Part III. Measurements of Intelligence in the United States Army. Government Printing Office, Washington, 1921.

DIVISION OF NEUROLOGY AND PSYCHIATRY, SURGEON GENERAL'S OFFICE

The Surgeon General, appreciating the highly specialized nature of modern medical practice, organized in his office, in addition to the existing divisions, several others to direct and supervise all matters relating to the recognized specialties pertaining to medical science. One of these was the division of neurology and psychiatry,⁷ of which the section of psychology constituted a part. Later, the section of psychology was made an independent division.⁸

With the reorganization of the Surgeon General's Office in the latter part of 1918, the division of neurology and psychiatry ceased to exist as such, and became a section of medicine, under the direction and control of the chief of the division of internal medicine.⁹ Reference is made later to this arrangement.

Prior to the organization of the division of neurology and psychiatry there was no neurological or psychiatric organization in the Office of the Surgeon General or in the Medical Department. A social and psychiatric department, organized at the Fort Leavenworth Disciplinary Barracks, had shown the value of psychiatry in relation to crime, delinquency, and disciplinary problems.¹⁰ But no special examinations as to the mental fitness of volunteers were made at recruit depots or recruit depot posts, or of applicants for commission in the Regular Army. There was a small number of medical officers who were recognized as having a knowledge of psychiatry, obtained, for the most part, during periods of service to which they were detailed at St. Elizabeths Hospital (Government Hospital for the Insane, Washington, D. C.). With the exception of service at the Letterman General Hospital, however, the special equipment of these officers was not utilized by the Medical Department of the Army as it would have been had their professional interests been in another direction, as, for example, toward bacteriology. The creation of this division, therefore, opened a new field in the Medical Department, concerning which the following announcement was made by the War Department on February 8, 1918:¹¹

Officers with special experience in nervous and mental diseases have been added to the Medical Department of the Army. Such officers are detailed at all base hospitals and with many divisions. Most base hospitals have also special nurses and therapeutic appliances for the care of nervous and mental diseases. The services of these officers and nurses are available, through their superior officers, for consultation in all matters pertaining to such diseases.

FUNCTIONS

To the division of neurology and psychiatry was assigned jurisdiction over all problems relative to neuropsychiatry. This involved (1) preparing for the examination of recruits in the mobilization camps in order that those unfit for military service because of neuropathic or psychopathic conditions might be discharged; (2) preparing adequate facilities for the observation, treatment, and care of soldiers ill of nervous or mental diseases pending discharge; (3) preparing for the treatment of soldiers in the American Expeditionary Forces who became incapacitated because of nervous or mental disease; (4) preparing for the continued treatment and final disposition of soldiers invalided home.

The following were special problems to which the division gave immediate attention: (1) Mobilization of the psychiatrists, neurologists, and psychologists

of the country for service with the Army. (2) Securing the enlistment of specially trained women nurses and male attendants for service in the neuropsychiatric hospital units. (3) Devising methods of examination whereby large numbers of men could be examined by a few specialists in a comparatively short time. (4) Determining neuropathic and psychopathic conditions which, in the light of the European experience, should exclude from military service. (5) Preparing plans for a standardized neuropsychiatric hospital for Army use. (6) Preparing plans for a special standardized 500-bed reconstruction hospital for nervous and mental cases to be located in France. (7) Preparing plans for 30-bed units to be attached to the base and other military hospitals in France. (8) Standardizing equipment for Army neuropsychiatric hospitals. (9) Standardizing neurological, psychiatric, and psychological examinations for Army use. (10) Preparing special report blanks adapted to military use. (11) Arranging for the systematic collection and utilization of statistical data. (12) Arranging for special intensive courses in war psychiatry and neurology for the additional training of young neurologists and psychiatrists. (13) Collecting information pertaining to the situation abroad for the guidance of those at work upon the problem in this country. (14) The study of disciplinary problems arising in the Army. (15) Developing methods by which the work of the neuropsychiatric units could be coordinated with the medical military machinery. (16) Developing plans for the continued treatment in this country of nervous and mental patients invalided home from the American Expeditionary Forces.

ADMINISTRATION

A small administrative force was maintained in the Office of the Surgeon General, but for the greater number the neuropsychiatrists were placed on duty at the hospitals, camps, cantonments, posts, ports of embarkation, and disciplinary barracks, both in this country and in France.

The first efforts of the division were directed toward classifying and exempting for neuropsychiatric service the specialists whose applications were received daily in great numbers, in deciding upon assignments for them when commissioned, in recommending orders, and in attempting to coordinate its own activities with those of other branches of the professional services.

The last was a difficult task. The majority of the officers in the Surgeon General's Office at the time were fresh from civil life, most of them were without military experience, and many were without administrative experience. For a long time there was no officer or machinery to coordinate different interests, and many recommendations were made from all sides which overlapped or conflicted and which could not be carried out successfully. The result was that the different professional divisions in the office operated independently, with much inevitable confusion. Ultimately this was corrected, with the development and correlation of the various professional activities of the office. With the reorganization of the office, in the latter part of 1918, the division of neurology and psychiatry ceased to exist as such, and became a section of the division of internal medicine.⁹ This was considered by the chief of the neuropsychiatric service an undesirable change as it interposed between him and the

executive officer of the Surgeon General's Office another officer, who was given authority, but who was not required to possess any special knowledge of nervous or mental diseases, who presented to the Surgeon General recommendations which he did not initiate, and of which he had no first-hand knowledge. The stream of execution was also slowed up, as each interruption of a channel of action involved, even in intraoffice activities, an additional delay of at least 24 hours.

Another disadvantage of this arrangement was that by it psychology was placed under medicine,⁹ when, in reality, it should have been under neuropsychiatry. While military psychology is ostensibly concerned with mental ratings and with the detection of mental deficiency—in other words, with a study of the normal mind and of the mind purely defective—it should not be forgotten that it constantly encounters medical problems of a psychiatric nature. Both the findings and the recommendations of psychologists concern psychopathology and consequently should go through the psychiatric officer and not the officer directing internal medicine.

CONSULTING SERVICE

No authority was vested in the officers of the division of neurology and psychiatry, Surgeon General's Office except, on occasions of special detail, to make inspections, all inspection duties normally being performed by officers of the division of sanitation, Surgeon General's Office. Certain special inspections, however, which were classed as consultations in reference to professional work, were made by members of the division of neurology and psychiatry. Some of the professional divisions of the Surgeon General's Office appointed officers known as consultants, who were assigned to different geographical regions for the purpose of consulting therein.¹² This plan was not adopted by the division of neurology and psychiatry for the reason that it was always possible to secure War Department orders designating an individual officer as a consultant, and it was deemed wiser to use different officers for this purpose as the need arose. For example, when an officer assigned to some particular post developed a particularly successful system of treatment or management of patients or of making examinations, permission for his temporary relief was obtained from his commanding officer, and he was sent to posts in his neighborhood to consult with neuropsychiatric officers there, in order that they might benefit by whatever he had to tell them. Contract surgeons also were appointed for consulting purposes when they had special knowledge that would prove useful to neuropsychiatric officers on duty in their neighborhood.

Practically all the officers detailed to this division were ordered from time to time to make trips to certain hospitals or camps for the purpose of ascertaining whether a more or less uniform standard of excellence in the neuropsychiatric services was being maintained. Consultations in California were made by a member of the staff of Mendocino State Hospital.¹³ This method of consultation in professional matters proved highly successful. Visits from outside officers to officers working at one point invariably resulted in an increase of interest, in the removal of any obstacles that may have existed, and in improvement of the standard of professional work.

Those who acted as consultants in base and general hospitals were assigned to the medical service and were usually referred to as neurologists, though in general hospitals in which psychiatric wards were established the consultations were conducted generally by the psychiatrists detailed there. There were many more demands for neurologists to serve in base and post hospitals and at detached points than could be met. They were supplied as freely as possible. They aided greatly in evacuation activities and in facilitating hospital business. When nerve injury cases began to be returned from overseas, neurologists were assigned to the various surgical services.

SPECIAL NEUROPSYCHIATRIC REPORTS

The officer in charge of the division of neurology and psychiatry realized that in view of the large number of neuropsychiatric examinations which were to be conducted in the Army, an unparalleled opportunity was at hand for obtaining information concerning a group of diseases of great social importance, the incidence of which was unknown and, further, that, in order to correlate the data derived from the examinations made, certain reports must be prepared and submitted to the Surgeon General for study and compilation by the division. It is true that the examinations conducted in the Army applied only to men of military age, but the statistical data elicited from this source must offer a reliable index to the extent to which disease and defects of this character occur throughout the entire population of the country.

It was believed that the time of the neuropsychiatrists should be largely occupied with their professional duties and that any forms adopted for the report of cases must be brief, concise, and practical. Another essential was that the report blank be so devised that the facts contained could readily be reduced to statistical form and made available for study.

The following blank forms were adopted and distributed to all stations where neuropsychiatric officers were on duty: ^a

FORM 89
MEDICAL DEPARTMENT, U. S. A.
(Authorized Sept. 19, 1917.)

RECORD OF NEUROLOGICAL AND PSYCHIATRIC EXAMINATION

Surname of patient	Christian name	Rank	Company	Regiment or staff corps

Examiners will record observations in the following sequence:

1. Record history of syphilis, previous diseases (physical or mental), injuries, alcohol and drugs; chief symptom; duration of present illness; evidence of alcoholic or drug addiction; state of nutrition, flesh, hair, nails, skin, and muscles.

2. If paralysis, note distribution, character, and contracture. If tremor or tics, note distribution and character. Note station and gait. Of reflexes, note knee jerks and abdominals especially; Babinski. Of eyes, note condition of pupils, nystagmus, double vision. If anesthesia, make chart showing distribution and different forms of sensibility affected. Note ataxia, taste, and smell. Note defects not previously mentioned.

^a These forms were prepared with the assistance of Dr. Horatio M. Pollock, statistician of the New York State Hospital Commission, whose knowledge and experience in this line of work rendered his advice particularly valuable.

3. Note behavior, attitude, emotional state, general motor condition; stream of thought, content of thought (compulsive ideas, obsessions, phobias, delusions, hallucinations, peculiar mental attitudes); mood (depressed, gay, suspicious, irritable, sulky, resentful); orientation; memory and thinking (past events, recent events; calculation); intellectual level (always in cases of mental deficiency; in other cases when possible); patient's interpretation of the development of the psychosis or neurosis and attitude toward it.

4. If diagnosis of mental defect is made, state method of examination and basis of conclusion.

Place _____ Signature of Examiner _____

Date _____, 191 _____, U. S. Army.

STATISTICAL DATA CARD				Accompanying diseases	
Surname		Christian name		_____	
Rank	Company	Regiment or staff corps		Wounds in engagements, with dates	
Diagnosis				Injuries not received in engagements, with dates	
Nervous disease or injury				Diseases during army life, with dates and lengths of time in hospital	
Psychoneurosis				_____	
Psychosis				_____	
Inebriety				Diseases previous to admission to Army	
Mental deficiency				Mental or nervous	
Constitutional psychopathic state				Venereal	
In line of duty?				Others	
Date of injury or onset of disease _____, 191				Alcoholic habits	
Reason for examination				Abstinent Moderate Intemperate	
_____				Family history	
By whom referred?				Of mental diseases	
Place and date of examination				Of nervous diseases	
Age		Race	Nativity	Of inebriety	
yrs.	mos.			Of mental deficiency	
Marital condition				Other etiological factors	
Single	Married	Widowed	Divorced	Recommendation of examiner	
Legal residence				Disposition, with date	
_____				Name and station of examiner	
Education				Name	
None.	Grades	High School	College	_____ U. S. Army.	
Home environment		Economic condition		Station	
Urban	Rural	Marginal	Comfortable	_____	
Previous occupation				FORM 90	
_____				MEDICAL DEPARTMENT, U. S. A.	
Arms of service				(Authorized Sept. 19, 1917.)	
Army service					
Rank					
Years					
Months					
(In U. S., P. I., Europe, or elsewhere (specify), with time in each)					
(OVER)					

(OVER)

FORM 91
MEDICAL DEPARTMENT, U. S. A.
(Authorized Sept. 19, 1917.)

REPORT OF COMPLETED NEUROLOGICAL AND PSYCHIATRIC EXAMINATIONS

At..... From....., 191 , to....., 191

Submitted by....., Examiner

Command, and organizations examined.....

Rank	Strength of command	Number examined	Number treated in hospital or dispensary	Diagnoses								Disposition of Cases		
				Total	Nervous disease or injury	Psychoneurosis	Psychosis	Inebriety		Mental deficiency	Constitutional psychopathic state	Recommended for discharge	Recommended for special treatment	Otherwise disposed of
								Alcoholic	Drug					
Commissioned officers.....														
Enlisted men.....														
Members of classes, officers' training camp.....														
Applicants for enlistment.....														
Total.....														

Remarks:

Signature.....

Date....., 191 , U. S. Army

(See directions on back)

Form 89 was intended as a clinical record of individual cases. Thousands of these completed forms were received in the Office of the Surgeon General and contained material of great clinical interest and value, but were too extensive for a thorough statistical study. Form 90 M. D., known as the statistical data card, contained a complete summary of the facts essential in a study of neuro-psychiatric cases. These forms, as received in the Office of the Surgeon General, furnished the basis of the statistics quoted in this volume and discussed in detail in the following chapters. Form 91 M. D. was the monthly summary of the work done at each station.

At the end of each month the complete forms were forwarded by the officer who prepared them, through the senior medical officer of the camp or hospital, to the Surgeon General. In the Surgeon General's Office the reports were studied and classified and from time to time reduced to statistical form.

The following instructions were issued as a guide in the preparation of the reports:

WAR DEPARTMENT,
OFFICE OF THE SURGEON GENERAL,
Washington, February 15, 1918.

Memorandum.

INSTRUCTIONS TO DIVISIONAL PSYCHIATRISTS AND OTHER MEDICAL OFFICERS IN CHARGE
OF NEUROLOGICAL AND PSYCHIATRICAL EXAMINATIONS RELATIVE TO THE PREPARA-
TION OF STATISTICAL DATA

In order to secure uniformity in the statistics of nervous and mental disease and defect the divisional psychiatrists and other medical officers who are in charge of the examinations will submit their reports on Forms 89, 90, and 91, Medical Department, specially provided for this purpose.

Form 89 is for the record of neurological and psychiatric examinations.

Form 90 the statistical data card will be used in submitting data relative to each person examined who is found to have nervous or mental disease or defect.

Form 91 is the monthly summary of the work done at the station.

These reports will be sent in at the end of each calendar month unless the work at the station is completed before such time. All reports will be addressed to the Surgeon General and sent to him by the divisional psychiatrist or other medical officer through the senior medical officer in charge of the station.

The following instructions for the preparation of data will be carefully studied and scrupulously observed.

All data will be clearly written in black ink, or preferably typewritten.

The data called for by every item on the report blank will be supplied if possible. If the information can not be obtained, leave the space blank, but enter a capital "U" (symbol for facts unascertained).

Do not use the interrogation point.

If the information is negative, enter "no" or "none." Do not use the (—) dash for unascertained or for negative.

Give exact data whenever possible. Avoid the use of the term "many" or "several." State information approximately if exact data can not be obtained. In determining the age of subjects, accept figures ending with 5 or 0 only after close questioning. Give the age in years and months when possible.

Avoid ambiguous abbreviations. Designate items on the reports by underscoring. Do not cross out items or use check marks. If the space in connection with any item on the front of the report blank is too small for a complete statement, mark the blank "over" and enter the data in the blank space on the back of the blank.

The following instructions and information relate to Form 90. The other blanks are self-explanatory:

CLASSIFICATION OF DISEASES, INJURIES, AND DEFECTS

Each case reported will be placed with appropriate specific designation under one of the following general heads:

- I. Nervous diseases or injuries.
- II. Psychoneuroses.
- III. Psychoses.
- IV. Inebriety.
- V. Mental deficiency.
- VI. Constitutional psychopathic states.

The terms given in the following classifications will be used whenever applicable to specify the particular disease, injury or defect.

I. NERVOUS DISEASES AND INJURIES

Abscess:	Myasthenia gravis.
Brain (specify location).	Myelitis:
Spinal cord (specify location).	Transverse.
Arteriosclerosis:	Traumatic.
Cerebral.	Myotonia congenita (Thomsen's disease).
General.	Neuralgia (specify nerve).
Spinal.	Neuritis (specify nerve).
Beri beri.	Diphtheritic.
Bulbar palsy.	Multiple—
Chorea.	Alcoholic.
Combined sclerosis.	Traumatic.
Ear diseases.	Other forms.
Embolism and thrombosis.	Pachymeningitis cervicalis.
Endocrinopathies (specify disorder):	Paralysis agitans.
Adrenal.	Paramyoclonus multiplex.
Thyroid.	Pes planus.
Pituitary.	Plumbism.
Other ductless glands (specify glands).	Poliomyelitis.
Epilepsy:	Progressive muscular atrophy.
Idiopathic.	Progressive muscular dystrophies.
Jacksonian.	Sciatica.
Exophthalmic goiter.	Syphilis of central nervous system.
Eye diseases.	Syringomyelia.
Facial palsy.	Tabes dorsalis (locomotor ataxia).
Hemorrhage (specify location).	Tics.
Herpes zoster.	Torticollis.
Hydrocephalus.	Tremor, chronic progressive.
Injury (specify kind).	Tumor:
Brain (specify location).	Brain (specify location).
Spinal cord (specify location).	Spinal cord.
Peripheral nerve (specify nerve).	Peripheral nerve (specify nerve).
Lateral sclerosis.	Vagotonia.
Lumbago.	Undiagnosed.
Ménière's disease.	Conditions secondary to other diseases:
Meningitis:	Aphasia.
Cerebrospinal.	Bulbar syndrome.
Tuberculous.	Hemiplegia.
Other forms (specify).	Jackson's syndrome.
Migraine.	Optic atrophy.
Multiple sclerosis (Disseminated sclerosis).	Paraplegia.

II. PSYCHONEUROSES

Enuresis.	Stammering.
Hysteria.	Other forms (specify).
Neurasthenia.	Undiagnosed.
Psychasthenia.	

III. PSYCHOSES

The classification of mental diseases given below is the one adopted by the American Medico-Psychological Association in May, 1917.

In designating the mental disease on the statistical card the group and type of the psychosis will be given whenever possible.

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Traumatic psychoses. 2. Senile psychoses. 3. Psychoses with cerebral arteriosclerosis. 4. General paralysis. 5. Psychoses with cerebral syphilis. 6. Psychoses with Huntington's chorea. 7. Psychoses with brain tumor. 8. Psychoses with other brain or nervous diseases (specify when possible). 9. Alcoholic psychoses: <ol style="list-style-type: none"> (a) Pathological intoxication. (b) Delirium tremens. (c) Acute hallucinosis. (d) Korsakow's psychosis. (e) Chronic paranoid type. (f) Other types, acute or chronic. 10. Psychoses due to drugs and other exogenous toxins. <ol style="list-style-type: none"> (a) Morphine, cocaine, bromides, chloral, etc., alone or combined (to be specified). (b) Metals, as lead, arsenic, etc. (to be specified). (c) Cases (to be specified). (d) Other exogenous toxins (to be specified). | <ol style="list-style-type: none"> 11. Psychoses with pellagra. 12. Psychoses with other somatic diseases (specify disease). 13. Manic-depressive psychoses: <ol style="list-style-type: none"> (a) Manic type. (b) Depressive type. (c) Stupor. (d) Mixed type. (e) Circular type. 14. Involution melancholia. 15. Dementia præcox: <ol style="list-style-type: none"> (a) Paranoid type. (b) Katatonic type. (c) Hebephrenic type. (d) Simple type. 16. Paranoia and paranoid conditions. 17. Psychoses with mental deficiency. 18. Psychoses with constitutional psychopathic inferiority. 19. Epileptic psychoses. 20. Undiagnosed psychoses. |
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IV. INEBRIETY

Alcoholism.	Drug addiction (specify drug).
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V. MENTAL DEFICIENCY

Imbecile. Moron.	Border-line condition.
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VI. CONSTITUTIONAL PSYCHOPATHIC STATES

Criminalism. Emotional instability. Inadequate personality. Nomadism. Paranoid personality.	Pathological liar. Sexual psychopathy. Other forms (specify). Undiagnosed.
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IN LINE OF DUTY

In answering this question examiners will be guided by instructions given in paragraph 448, page 141, of Manual for the Medical Department.

DATE OF INJURY OR ONSET OF DISEASE

An exact date will be specified if possible. If the exact date can not be ascertained, give approximate date.

REASON FOR EXAMINATION

It will be determined whether the examination was to determine (a) fitness for Army service, (b) responsibility for misconduct, or (c) nature of incapacity or illness.

AGE

The age of the soldier will be stated in years and months. If the exact date can not be ascertained the examiner should estimate the age as closely as possible and mark "est." after the number given.

RACE

In reporting the race of the soldier use the list given below, which is a condensed form of the list adopted by the United States Immigration Service.

African (black). ⁱ	Lithuanian.
American Indian.	Magyar.
Armenian.	Mexican.
Bulgarian.	Porto Rican.
Chinese.	Portuguese.
Cuban.	Rumanian.
Dutch and Flemish.	Scandinavian (Norwegians, Danes, and Swedes).
East Indian.	Scotch.
English.	Slavonic. ^j
Filipino.	Spanish.
Finnish.	Spanish-American.
French.	Syrian.
German.	Turkish.
Greek.	Welsh.
Hebrew.	Other peoples.
Irish.	Mixed.
Italian (includes "north" and "south").	Race unascertained.
Japanese.	
Korean.	

NATIVITY

The State or Territory of birth of those born in the United States will be given. Enter "U. S." only when the State can not be ascertained.

The date of nativity of those of foreign birth will be based on the classification given below.

Africa.	France.	Portugal.
Asia. ^k	Germany.	Rumania.
Atlantic Islands.	Greece.	Russia.
Australia.	Hawaii.	Scotland.
Austria.	Holland.	South America.
Belgium.	Hungary.	Spain.
Bohemia.	India.	Sweden.
Canada. ^l	Ireland.	Switzerland.
Central America.	Italy.	Turkey in Asia.
China.	Japan.	Turkey in Europe.
Cuba.	Mexico.	Wales.
Denmark.	Norway.	West Indies. ^m
England.	Philippine Islands.	Other countries.
Europe.	Poland.	Born at sea.
Finland.	Porto Rico.	

LEGAL RESIDENCE

The legal residence is the place in which the home of the soldier is located. If he has no home his place of residence at the time of enlistment will be given.

ⁱ Do not say "colored."

^j "Slavonic" includes Bohemian, Bosnian, Croatian, Delmatian, Herzegovinian, Montenegrin, Moravian, Polish, Russian, Ruthenian, Servian, Slovak, Slovenian.

^k Not otherwise specified.

^l Includes Newfoundland.

^m Except Cuba and Porto Rico.

EDUCATION

Report education as none if the soldier could neither read nor write previous to onset of his disease. After the words "grades," "high school," and "college," insert number of years completed.

HOME ENVIRONMENT

Report places of residence with a population of over 2,500 as "urban"; and all other places as "rural." Care should be taken to ascertain whether the actual environment of the subject previous to entering the Army was that of country or city life. Even though the post office address given be that of a place with a population of over 2,500, if it appears that the soldier lived in the open country, the environment will be designated as "rural."

ECONOMIC CONDITION

The economic condition of the soldier will be designated as "marginal" or "comfortable." "Marginal" includes those who live on daily earnings but who have not accumulated enough to maintain themselves without employment for four months. "Comfortable" includes those who have accumulated enough to maintain themselves without employment for four months or more.

PREVIOUS OCCUPATION

Indicate in every case the kind of work done or character of service rendered. State the occupation of the soldier, not that of his employer.

ARMY SERVICE

The rank and time of service in the various arms of the service will be given accurately. In case the soldier has rendered different kinds of service the facts should be definitely stated.

ACCOMPANYING DISEASES

Every important disease present at the time of examination and not included under the heading "Diagnosis" will be specified.

WOUNDS IN ENGAGEMENTS, WITH DATES

"Wounds" include only injuries received in engagements. Specify part of body injured and extent of injury.

INJURIES NOT RECEIVED IN ENGAGEMENTS, WITH DATES

Those include all injuries of importance received in the Army service not included under wounds. State whether injury resulted through accident or was self-inflicted.

DISEASES DURING ARMY SERVICE

Important facts in the hospital record of the soldier will be given.

Venereal diseases contracted during Army service will be noted whether subject entered the hospital or not.

DISEASES PREVIOUS TO ADMISSION TO ARMY

Care will be taken to report venereal disease, tuberculosis, or any disease or injury that would have bearing on soldier's present condition.

ALCOHOLIC HABITS

Report as "abstinent" those who do not use alcoholic liquors at all, as "intemperate" those who become intoxicated or show physical or moral deterioration from the use of alcohol or who have committed unsocial acts while under the influence of alcohol. All others who use liquors will be classed as "moderate." In case the habits of the subjects in respect to alcohol have changed, the fact will be stated.

FAMILY HISTORY

Report separately the family history of the soldier in respect to (a) mental diseases, (b) nervous diseases, (c) inebriety, and (d) mental deficiency.

OTHER ETIOLOGICAL FACTORS

Under this heading will be stated every specific cause of the soldier's disease or condition not previously indicated. Indefinite or doubtful factors will not be given. As causes of nervous and mental diseases are often multiple, it is important that a full statement be given.

RECOMMENDATIONS OF EXAMINING OFFICER

Under this heading will be given the recommendations of the examiner relative to the treatment or disposition of the soldier.

DISPOSITION WITH DATES

State if the soldier is discharged from the Army or sent to a civil hospital or institution, or held for treatment in the camp hospital, or if death ensues. In disciplinary cases, state action taken.

If the case is not disposed of at the end of the month when the statistical data cards are sent in, the final disposition of the case will be reported by letter supplemental to the monthly report.

The records of the cases (Form 89) were of immediate practical assistance to the medical officers on duty in the Office of the Surgeon General in rendering opinions on special cases which were constantly being referred for comment by The Adjutant General of the Army, by the Bureau of War Risk Insurance, and by Members of Congress. They further made it possible for The Adjutant General to furnish the States with information concerning the nervous and mental conditions of rejected recruits and discharged soldiers who required State care, an opportunity of which many States availed themselves. In most instances the information recorded on the special forms was more definite and complete than that contained in the general medical records of the War Department.

In addition to the medical and statistical importance of the records, they enabled the division to keep in close contact with the work being done in the field, to arrive at conclusions, and to form opinions as to the quality and amount of work. The character of the reports and the promptness and manner with which they were rendered, assisted the division in computing the ratings which formed the basis of promotion for these officers. It seemed at first that these forms, which were supplemental to those which were still required by the War Department, might be regarded as an additional burden and would be made out unwillingly. Such, however, was not the case. The officers seldom complained of having to render Forms 89 and 90; on the contrary, many expressed satisfaction at thus being kept in professional touch with the central agency particularly interested in their work. The special forms showed also where the services of specialists were most needed. This was useful information as the demand for services of this character always exceeded the supply.

REFERENCES

- (1) Correspondence. On file, Record Room, S. G. O., 169005 and 183231 (Old Files).
- (2) Report to the Surgeon General, U. S. Army, April 12, 1917, by Pearce Bailey, M. D., Stewart Paton, M. D., and Thomas W. Salmon, M. D. On file, Historical Division, S. G. O.
- (3) Report to the Surgeon General, U. S. Army, May 12, 1917, by Dr. Pearce Bailey, of visit to Ottawa, Canada, with reference to the management of mental cases among Canadian soldiers. On file, Historical Division, S. G. O.
- (4) Report to the Surgeon General, U. S. Army, June 9, 1917, by Stewart Paton, M. D. On file, Historical Division, S. G. O.
- (5) Report to the Surgeon General, U. S. Army, undated, by Dr. Thomas W. Salmon: The Care and Treatment of Mental Diseases and War Neuroses ("Shell Shock") in the British Army. On file, Historical Division, S. G. O.
- (6) Letter from the Surgeon General, U. S. Army, to the National Committee for Mental Hygiene, June 11, 1917. Subject: Applications of psychiatrists for the Reserve Corps. On file, Record Room, S. G. O., 169003 (Old Files).
- (7) S. O. No. 166, W. D., July 19, 1917, par. 137. Also: Annual Report of the Surgeon General, U. S. Army, 1919, Vol. II, 1079.
- (8) Fifth indorsement, W. D., A. G. O., to the Surgeon General, U. S. Army, January 19, 1918. On file, Record Room, S. G. O., 702 (Psychological).
- (9) Office Order No. 97, S. G. O., November 30, 1918. On file, Record Room, S. G. O., 024.17 (Section of Neuropsychiatry).
- (10) Report of the work of the class in disciplinary psychiatry, at the U. S. Disciplinary Barracks, Fort Leavenworth, Kansas, to the Surgeon General, U. S. Army, January and February, 1919. On file, Historical Division, S. G. O.
- (11) Bulletin No. 4, War Department, February 7, 1918, Par. V.
- (12) Memorandum from Brig. Gen. T. B. Lyster, M. C., to the Surgeon General, U. S. Army, August 28, 1918. Subject: Consultants. Approved by the Surgeon General. On file, Record Room, S. G. O. 211 (Consultants).
- (13) S. O. No. 214, W. D., October 16, 1917, Par. 59, and S. O. No. 58, W. D., March 11, 1918, Par. 47, detailing Contract Surgeon Robert L. Richards to duty as consultant in neuropsychiatry.

CHAPTER II

PERSONNEL

PROCUREMENT AND DISTRIBUTION; TRAINING

PROCUREMENT AND DISTRIBUTION

NEUROPSYCHIATRISTS

After the establishment of the division of neurology and psychiatry the War Work Committee of the National Committee for Mental Hygiene continued to forward applications of medical men with neurological and psychiatric training for commissions as medical officers, but, as the war proceeded, the majority of such applications were passed upon directly in the Surgeon General's Office. Some neuropsychiatrists who were commissioned, without being exempted for neuropsychiatry, obtained special work in the field through their personal applications for transfer from other services; a few, too, requested transfer from neurology and psychiatry to other services. At first many neurologists and psychiatrists hesitated about applying for a commission at all for fear they would be detailed to other duties than those for which they were specially qualified. They were given such assurances as were possible under the circumstances, namely, that they would be used for work for which they were best fitted. It was only under exceptional circumstances that they were detailed to other activities. Some, as in other professional services, who showed ability in administration, were relieved of professional duties and assigned to administrative work.

At first great care was exercised in regard to the qualifications of physicians seeking commissions for the purpose of doing neuropsychiatric work and for transfer thereto. Estimates of qualifications were based, in the first place, on clinical experience in civil life and, later, on the recommendations of superior and commanding officers. When the demand for specialists of this class became too great, especially from the American Expeditionary Forces, the strictness in regard to qualifications was somewhat relaxed, and the average in professional ability suffered a decline. It is now believed that this relaxation in professional requirements was a mistake. It would have been wiser to have refused to accept for special service all who were not sufficiently qualified professionally. At best, specialism is a difficult matter to assimilate within a military organization. In mobile units it may be quite impossible to arrange it, and even in base and general hospitals it constantly meets obstacles. Those who represent specialties, therefore, if they are really to prove themselves as specialists, must be high-grade men in two essential particulars: They must have a clinical familiarity with the classes of patients their specialty calls them to treat or to pass upon, and, in addition, they must possess traits in personality which render a man adaptable and self-reliant—traits which distinguish the

capable medical officer quite independently of his professional qualifications. In actual warfare the latter characteristics are indispensable and outweigh the others. If a man is a failure in either particular he injures the general standing of specialists. It is believed, therefore, that the good of the service is better met by leaving the place of a specialist vacant, even when one is urgently needed, than it is by assigning to it any but a well-qualified person.

In general, the officers serving in this division were either psychiatrists or neurologists, although a few had been thoroughly educated in both branches. The psychiatrists were much more numerous and were drawn chiefly from State hospitals. They were, as a rule, men of high moral standards, with excellent experience and ideals in the care of the insane, and were skillful administrators. They were, perhaps, somewhat lacking in aggressiveness, and none too familiar with general medical problems. It was a disadvantage, on the one hand, that men intrusted with so novel an experience as the widespread dissemination of neurological and psychiatric principles in the Army should be lacking in the insistence which might lead to their early adoption. On the other hand, the fact that psychiatrists reacted to the military situation as a body of trained men rather than as individuals with a message, may have resulted in more good in the end than if they had comported themselves as individual reformers. As has already been said, the military system, in its fundamental construction, is opposed to specialism, and it is well within the range of probability that the psychiatrists, by reason of their State hospital training, were of an adaptability which finally made psychiatry so welcome to the Medical Department of the Army. The neurologists were less homogeneous, as a class, than the psychiatrists, coming nearer to the type of general practitioner. They were more familiar with the world, more aggressive than psychiatrists, and more familiar with border-line types. Few of them were competent to take charge of the insane, although both neurologists and psychiatrists showed great aptitude in making up, during actual service, whatever defects may have existed in their professional education.

At the time of the creation of the division of neurology and psychiatry, about 50 neuropsychiatric officers had been commissioned.¹ Five months later, there were 235, of whom 16 were majors, 71 captains, and 148 lieutenants.¹ At the time the armistice was signed, there were 430 officers in this country and 263 overseas, making a total of 673.² Of these there were 2 colonels, 2 lieutenant colonels, 84 majors, 278 captains, and 307 lieutenants.³ After the armistice was signed promotions were stopped for a time and when resumed were given much less freely than previously.

The distribution of commissioned personnel was made, first, for the purpose of establishing neuropsychiatric examinations in the new Army, and, second, to supply neurologists and psychiatrists to base and other military hospitals, in accordance with the plan for detailing officers of the Medical Reserve Corps for duty as specialists in Army camps.⁴ The assignments of these officers during the autumn of 1918 gives an index to the work accomplished in the execution of this plan.³

Assignment of neuropsychiatric officers, autumn of 1918

	Sept. 27	Oct. 5	Nov. 6		Sept. 27	Oct. 5	Nov. 6
UNITED STATES				OVERSEAS—continued			
Surgeon General's Office.....	4	4	5	Base Hospitals, France.....	130	130	c 130
Base hospitals, cantonments.....	39	39	40	Evacuation hospitals, France.....	40	40	39
Base hospitals at forts.....			11	Divisions.....	38	37	41
Boards, United States Army.....	109	125	148	Unassigned, A. E. F.....	18	13	13
Aviation.....	7	7	7	Hospital trains and replacement units.....	2	8	11
Disciplinary.....	7	7	7	In England.....	16	16	16
General hospitals.....	48	52	81	Philippines.....	1	1	1
Ports of embarkation.....	8	9	11	Total.....	247	247	253
Training institutions.....	34	38	25	POSSIBILITIES			
Medical officers' training camps.....		6	6	Internes.....	8	7	7
St. Elizabeths Hospital.....	7	8	$\left\{ \begin{array}{l} a \ 8 \\ b \ 11 \end{array} \right.$	Inactive.....	6	6	7
Recruit depots.....			16	Prospective "Under orders".....	51	55	114
Total.....	233	296	377	Papers received.....	57		
OVERSEAS				Grand total.....	632	611	758
Headquarters office, medical and surgical consultants.....	2	2	2				

^a Training.^b Duty.^c 35 of this number were still in this country on that date.

Perhaps the most important piece of intensive work done by the neuropsychiatrists in the early period of mobilization was in connection with the examination of candidate officers at the officers' training camps. It was not possible to send examiners to many of the first series of training camps, which closed August 1, 1917, although excellent pioneer work was done at some places. At the second series of camps, August 27, to November 26, 1917, valuable service was rendered by specially selected contract surgeons. Contract surgeons were chosen for this service partly by reason of a shortage of competent officers, but especially because the specialists selected were men of mature judgment and long experience, and so better qualified to make successful approaches to the educated men who made up the class of student officers.

It was so important to eliminate unfit officers at the outset of their military career that it is unfortunate that so many commissions were granted—e. g., in the Quartermaster and Medical Corps—without subjecting the candidate to the thorough and exhaustive examinations which, later, were established at all the camps.

It was attempted to make examinations of the National Guard in the armories before they went to the camps, but this was successful in few cases,^a by reason of the great confusion which existed in all branches of the service at that time. Examiners were sent later to all cantonments and recruit depots, to all base hospitals, to some general hospitals, and to all disciplinary barracks.²

As soon as circumstances demanded, officers were detailed to the ports of embarkation to make examinations of unexamined men ordered overseas, or to bring before disability boards men recommended for discharge by neuropsychiatrists whose recommendations had not been acted upon.²

^a In the New England States and in the States of New York, New Jersey, Pennsylvania, Maryland, Virginia, North Carolina, and South Carolina.

By December, 1917, it was realized in the office of the chief surgeon, A. E. F., that the number of troops then in France, many of whom had sailed before the neuropsychiatric examinations had begun, rendered imperative the services of a director for nervous and mental diseases. Consequently a neuropsychiatrist was ordered overseas as a casual with recommendation that he be placed in charge of these matters—a recommendation which was complied with on his arrival.⁵ After that, assignments for service with the American Expeditionary Forces became increasingly frequent, being made to overseas base hospitals, evacuation hospitals, Base Hospital No. 117 (special hospital for war neuroses), and as casualls and replacements.⁶ Some younger officers were assigned to the liaison officer in London for the purpose of studying the methods of management of the war neuroses in the English military hospitals.

DIVISION PSYCHIATRISTS

In January, 1918, on the recommendation of the division of neurology and psychiatry, the War Department created the position of division psychiatrist, with the rank of major,⁷ one for each tactical division.

The creation of this position, which was the first recognition in the Army of the utility of specialists for troops in the field, proved of the utmost importance. These positions were filled as fast as divisions were formed. The official detail of each of these officers was to one of the field hospitals of the division concerned, but they were generally given desks in the office of the division surgeons, from which points they could operate most effectively. Being with and a part of a tactical division, they were able to exercise the preventive side of their specialty to the utmost advantage. It was their duty to keep in touch with the mental health of the command and to familiarize medical officers serving with sanitary troops with the methods of neurology and psychiatry. During the training period they were available for all special examining boards. They directed the neuropsychiatric examinations of their divisions, supervised the preparation of the special reports to the Surgeon General, and saw to it that the recommendations of the neuropsychiatric examiners were promptly prepared for forwarding to general disability boards. They visited the regimental infirmaries and held informal conferences from time to time with regimental surgeons and company commanders. They were generally available for consultation and established a satisfactory cooperation with judge advocates, by means of which the mental state of prisoners or of those accused was established as a factor in their delinquency. Reports of the functioning of these officers overseas indicate that they assisted materially in maintaining the integrity of the commands to which they were attached and expedited the elimination of the unfit.⁸ Without them the prompt treatment of functional nervous disorders in the hospitals attached to the combat forces, which practically eliminated "shell-shock" as a military problem in our troops, would not have been possible.

The duties of the divisional psychiatrists were to be as follows:⁹ (1) To examine or cause to be examined all cases of mental and nervous diseases occurring in the command. (2) To be available for all special neuropsychiatric examining boards convened from time to time for the purpose of examining

the command. (3) To ask for the assignment of regimental surgeons to assist in the neuropsychiatric examination of recruits; this latter largely for the purpose of instruction of regimental surgeons. (4) To supervise the making of all reports of examinations in the specialty and the forwarding of them to the Surgeon General. (5) To see to it that the recommendations of neuropsychiatric examiners were promptly prepared for forwarding to general disability boards. (6) To hold from time to time brief informal conferences with regimental surgeons and company commanders in relation to the general subject of military neuropsychiatry. (7) In cantonments, to be available for consultation with medical officers stationed at base hospitals. (8) To visit frequently regimental infirmaries and, whenever invited, the nervous and mental wards of base hospitals. (9) To cooperate with judge advocates for the purpose of establishing in every division a method of treatment of delinquents similar to that in successful operation at the disciplinary barracks, Fort Leavenworth. (10) Consultation service in reference to service battalions should such service battalions be established in connection with depot brigades or base hospitals. (11) To cooperate with psychological examiners and, if practicable, to arrange for psychiatric and psychological surveys of troops to take place at the same time and place. Division surgeons were to assist in every way possible to the end that the division psychiatrist should have the necessary facilities for carrying on his work, and especially in regard to desk room, stenographic assistance, and transportation.

CONTRACT SURGEONS

Contract surgeons were employed¹ from time to time and proved valuable, as by this means were secured the much needed services of men of exceptional ability who were over age, or who, for other reasons, could not enter the military service for overseas duty.

FEMALE NURSES

Second in importance to the mobilization of neurologists and psychiatrists was the recruiting of nursing personnel. The number of female nurses in the country trained for the care of mental and nervous patients was relatively small, compared with the great number of such patients in public and private hospitals, in contrast to the proportion and number of nurses experienced in general hospital care available for the physically sick. Every effort had to be made to conserve the supply of those experienced in neuropsychiatric work for the needs for the special wards and hospitals set aside for mental and nervous cases in the Army. To this end the Mental Hygiene War Work Committee secured the services of the superintendent of nurses of Bloomingdale Hospital, New York, who from the summer of 1917 until she assumed the duties of chief nurse of Base Hospital No. 117,¹⁰ the overseas hospital for war neuroses, devoted many months to the procurement of specially trained nurses for service with neuropsychiatric units in this country and overseas. The need for such nurses proved to be very great, and the National Committee for Mental Hygiene used all of its resources and contacts and developed others to stimulate recruiting from civil hospitals for mental and nervous diseases. Working arrangements

for the enrollment of neuropsychiatric nurses were made with the Army Nurse Corps and the nursing service of the American Red Cross, through which nurses for the psychiatric units were registered. Many of the nurses with the special training were already enrolled in the Red Cross.

The same difficulty arose in regard to the psychiatric nurses as in regard to the psychiatric officers—proper assignment so that the full benefit of their special training and experience could be obtained, and that the psychiatric nursing needs of the Medical Department of the Army could be met. It was obvious that the psychiatric needs would never be met and little of importance would be gained by commissioning psychiatrists and enrolling psychiatric nurses if these officers and nurses were to be swallowed up, as it were, in the administrative routine and assigned to duties for which they were little or not at all fitted, while others equally unfitted were assigned to work which only the psychiatric officers and nurses were prepared to do excellently. The problem was met so far as the medical officer was concerned, as previously noted, by the plan of exemption to specialized divisions which was early put into effect in the Office of the Surgeon General.

This problem was more troublesome in the nursing service. A psychiatric nurse may be of service upon any ward; a nurse, no matter how excellent her general training may have been, is not only of little use but may even be a handicap to the work on a psychiatric ward unless she has had psychiatric nursing experience. Not only does she not understand, she misunderstands, the problems about her, and creates more difficulty—with the best of intentions—than she appeases. The importance of having available for the psychiatric wards suitably trained nurses was realized and every effort was made not only to recruit these nurses but also to hold them available for psychiatric work, especially in overseas units, but in home cantonments as well. Efforts were made to keep an exempted list both in the office of the Army Nurse Corps and in the reserve list of the American Red Cross, but the plan did not work well. The pressure for nurses upon both the Army Nurse Corps and the American Red Cross was so great that it was frequently impossible, or seemed to be, for either organization to adhere strictly to a policy of exemption as was done successfully with officer personnel.

MALE ATTENDANTS AND NURSES

Efforts were made to enlist male attendants and nurses trained in the care of mental and nervous cases for service with the neuropsychiatric units. These were secured, largely, from the personnel of State hospitals for the insane. During the early period of hospital organization, the policy had been followed of assigning to the psychiatric wards enlisted men of the Medical Department regardless of their lack of experience in such work. Officers who had come from long experience in civil hospitals knew that this would not be satisfactory, but it was not until a number of quite unnecessary, serious accidents had occurred in various psychiatric wards that others were convinced that trained psychiatric attendants were necessary. The number of trained attendants in

the country was distinctly limited, and it was necessary that those available to the Army should be conserved. It was known that many had enlisted voluntarily and that hundreds had been called in the drafts. Some of these already were serving in the Medical Department, but on assignments not particularly suited to their training. Others were in different branches of the military service. The problem was to locate these men, more particularly those in the Medical Department, and to make possible their assignment to psychiatric duty. In this, as in the work of procuring officers and female nurses, the Mental Hygiene War Work Committee cooperated with the Surgeon General.

The plan of inducting men into the service and assigning them immediately to psychiatric duty worked well. Thus several hundred excellently trained men were obtained for service that was greatly needed and for which they were specially equipped. The authority to deal directly with local draft boards with the view of inducting men into special branches of the military service was rescinded in June, 1918.¹¹ That such a plan could be abused by individuals having themselves inducted into noncombatant services for which they had no particular fitness is obvious, but such a plan properly safeguarded has the possibilities of great service to the Army. Without such a plan it would not have been possible for the division of neurology and psychiatry to have assembled even a nucleus of trained attendants about which it could build an attendant service out of untrained men supplied by the Medical Department. As the number of trained men available to the division of neuropsychiatry was far below the number needed, it was necessary to call upon the Medical Department for the additional men required. These men were sent, when possible, to St. Elizabeths Hospital, Washington, for training, or to one of the five large neuropsychiatric centers established by the division.

The State hospitals for mental diseases throughout the country cooperated whole-heartedly with the National Committee for Mental Hygiene and the division of neurology and psychiatry in providing the Army with trained attendants and nurses, as well as physicians. These hospitals seldom had the quota of physicians, nurses, and attendants they required, and when to the usual shortage was added the depletion due to personnel entering the Army the situation in many hospitals became serious. There were few complaints, however. Toward the latter part of the war it became evident that few more could be spared from the attendant services without the situation becoming dangerous; it was then suggested that trained attendants and male nurses, called in the draft, claim exemption under section 80; section 81, rule 16; section 88, rule 25; section 89, rule 26, of the Revised Selective Service Regulations.

PSYCHIATRIC AIDES

Special women assistants, termed psychiatric aides,¹² were employed, on civilian status, after a course of training at Smith College.

The shortage of competent neuropsychiatrists in the Army brought to light marked defects in the educational opportunities in America for this important specialty. As far as psychiatry is concerned, little provision was made in the United States before the World War for the proper instruction of undergraduate students in medical schools. A few clinical lectures were given, but the students were not afforded opportunity for sufficient ward work for these lectures to be of any great advantage to them. There were also few provisions for postgraduate instruction. As stated before, practically all the psychiatrists of the country were employees of State hospital systems and had received their education through routine performance of their duties. Their experience was largely confined to institutional patients, and they had had little opportunity to observe the border-line cases, which constituted, after all, one of the real problems of the Army. There were, however, a few important centers for psychiatric instruction, such as the State Psychopathic Hospital, Ann Arbor, Mich.; the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital, Baltimore, Md.; the Boston Psychopathic Hospital; the New York State Psychiatric Institute; and St. Elizabeths Hospital (Government Hospital for the Insane), Washington, D. C.¹³ The last had been used as a center for the instruction of medical officers of the Army and Navy.

In neurology educational conditions were no better. Practically the only clinical instruction given was on out-patients. Bed services in connection with medical schools were practically unknown, few hospitals had any beds set aside for neurological cases, and in few hospitals did neurological patients have any real representation.

The Neurological Institute, in New York City, received many students, but it had no amphitheater, and the teaching done there, while of high quality, was performed under the greatest difficulty.

The meager educational provisions for these two branches resulted largely from the lack of acquaintance of the medical profession as a whole with the purposes and methods of neurology and psychiatry and its failure to perceive the clinical and economic importance of these specialties. Few medical men, apparently, realized that no clinician ever was great who did not carry into his practice a good working knowledge of mental pathology; few could estimate the wastage to be saved by taking it into account. At the beginning this was true for the medical officers of the Army, but it is believed that the experiences of the war made them more alive to these matters than are civilian physicians.

The almost simultaneous opening of many cantonments in 1917 created so great a press for neuropsychiatrists that it was rarely possible to send them to officers' training camps for military training. A few were ordered to these camps, and some officers detailed at these camps who were discovered to have had neuropsychiatric training were accepted for neuropsychiatric service; but most neuropsychiatrists acquired military knowledge by actual field duty.

It was often found desirable to provide additional instruction in the professional aspects of their work. It was not infrequent to find an officer who

^b For a full discussion of Medical Department training, see Vol. VII, Training.

had had good neurological training but little psychiatric training, or one who had had good psychiatric training but not an adequate foundation in neurology. It was desirable to round out the training of those men and to better equip others whose training in both fields had been limited. Seven institutions, distributed geographically, were asked by the Surgeon General to provide suitable courses of instruction:¹³ Neurological Institute, New York City; State Psychopathic Hospital, Ann Arbor, Mich.; Philadelphia General Hospital, Philadelphia, Pa.; Mendocino State Hospital, Talmage, Calif.; Henry Phipps Psychiatric Clinic, Baltimore, Md.; State Psychopathic Hospital, Boston, Mass.; St. Elizabeths Hospital, Washington, D. C. All responded cordially. The directors of these institutions were commissioned or served under contract and were given the title of military director.¹ The military directors secured the collaboration of many other representative teachers of the medical community, with the result that excellent special neuropsychiatric instruction was provided.¹

These courses were usually of six weeks' duration, although not infrequently interrupted by the pressing need for neuropsychiatric officers in the field. Even when courses were not actually in progress there were usually some students left on special detail to profit by the usual clinical routine of the institution. The course of study included lectures, clinics, demonstrations, and laboratory work.¹ The fields covered were psychiatry, neurology, psychology, personality problems, serology, neuropathology, with collateral instruction in otology and ophthalmology. In planning the courses, the amount of time which the exigencies of the service would allow to be devoted to the subject was considered, and the rosters and schedules were prepared accordingly.

While it was realized that the instruction given in neurology should be and was largely clinical, it was deemed essential to give some didactic and semi-didactic instruction in neuroanatomy, neurophysiology, and neurological medicine. The outlines were planned, therefore, to include a limited amount of this work.

Physiology of the nervous system, especially as concerns cerebral, spinal, and peripheral localization, received particular attention, and an effort was made to follow clearly the outlines, physiological teaching by the presentation of clinical cases illustrating the subjects taught. Organic neurology was taught by systematic demonstration of organic symptomatology illustrated by cases which were made to cover a wide range in most of the schools. Many cases of tabes and other forms of sclerosis, syringomyelitis, organic hemiplegia, and other organic nervous diseases were demonstrated. The differentiation of such conditions as hemorrhage, thrombosis and embolism and their separation from focal lesions, like tumors and abscesses, were amply illustrated. Moving-picture demonstrations were used whenever possible. Instruction in syphilis of the nervous system and epilepsy were emphasized. Lectures on war neuroses were given. Pathology of the cerebrospinal fluid and neurohistology were thoroughly gone into. Electrodiagnosis and electrotherapeutics were covered, including a description of the various forms of electrical apparatus. Close attention was given to those phases of ophthalmology which are associated with neurological work. Instruction in neuro-otology included detailed instruction in the Bárány tests.

The plan for the course of instruction in psychiatry was based on suggestions contained in Medical Department Circular No. 22, Office of the Surgeon General, Washington, D. C., dated August 1, 1917.^c However, the instruction given was not confined to those suggestions, and full advantage was taken of the very large and varied amount of clinical material available.¹⁴

As an illustration of the manner of execution of the plan of instruction the course given at the psychopathic hospital, Ann Arbor, Mich., is reproduced here in full:

THE COURSE IN NEUROPSYCHIATRY FOR MEDICAL OFFICERS OF THE ARMY, CONDUCTED AT THE PSYCHOPATHIC HOSPITAL OF THE UNIVERSITY OF MICHIGAN

Soon after the organization of the War Work Committee of the National Committee for Mental Hygiene, plans were perfected for the instruction of medical officers assigned to neuropsychiatric service in the Army. It was planned that this instruction should be given at various neurological and psychiatric hospitals which were adequately equipped for carrying this through.

In accordance with this plan such a course was organized at the psychopathic hospital of the University of Michigan in the latter part of July, 1917.

As the period of assignment of officers for instruction would necessarily be brief, it was essential that the instruction should be as intensive as possible and also be broad enough in scope to meet the practical needs of a neuropsychiatric medical service. To this end instruction was provided in those medical subjects that might form a background for neuropsychiatric training and would have a practical application in neuropsychiatric diagnosis and treatment.

The instruction was arranged to follow out a definite weekly schedule which was planned to furnish a well rounded out course to be completed in six weeks.

As officers were continually coming and going, owing to exigencies of the Army requirements, it was found impossible for each man to follow a prescribed schedule closely. Some were in attendance for only two weeks, while others remained longer than the six weeks' period. Repetitions of the course made it possible to meet these irregularities.

By the time the course was organized it was known from the medical experiences of the war what special training was needed, and the course was shaped to meet these requirements.

The following schedule shows the arrangement of the instruction:

	9-10	10-11	11-12	1.30-2	2-3	3-4	4-5	5-6
Monday		Doctor Camp Clinical neurology		Doctor Barrett Psychiatric clinic				
Tuesday		Doctor Barrett Psychiatric conference		Clinical psychiatry Hospital staff conference			Doctor Barrett and Doctor Gurd Neuralpathology	
Wednesday		Doctor Slocum Neurological disorders of the eye		Doctor Barrett and Doctor Gurd Neuralpathology		Doctor Camp Neurological clinic		
Thursday	Doctor Jones Psychometric tests			Doctor Barrett Psychiatric conference			Doctor Barrett and Doctor Gurd Neuralpathology	
Friday		Doctor Camp Clinical neurology			Doctor Barrett Psychiatric conference		Doctor Barrett and Doctor Gurd Neuralpathology	
Saturday	Doctor Furstenberg Neurological disorders of the ear							

^c This circular is quoted in full in Chap. IV.

The detailed instruction as given in the various divisions of the course was as follows:

PSYCHIATRY

Psychiatric instruction was given at the psychopathic hospital by Doctor Barrett and the medical staff of the hospital, Dr. Earl Palmer, Dr. B. L. Jones, Dr. Raymond F. Wafer, and Dr. James Stanton. The following subjects were covered:

1. General survey of the problems of mental disorders in their military relations. Two hours.
2. Discussion of the organization for neuropsychiatric work; of the schemes and methods for diagnosis and recording of data. Two hours.
3. General psychopathology. Didactic lectures, with clinical demonstrations. Ten hours.
4. The functional mental disorders of the present war. Survey of the experiences published in the German, French, and British literature. Four hours.
5. Shell shock and the psychoneuroses. Two hours.
6. Psychoneuroses; neurasthenia; anxiety neuroses; hysteria; compulsion neuroses. Didactic lecture and clinical demonstrations. Four hours.
7. Manic-depressive insanity. Didactic lecture and clinical demonstrations. Two hours.
8. Dementia præcox. Didactic lecture and clinical demonstrations. Four hours.
9. Syphilitic mental disorders. Didactic lecture, clinical and anatomical demonstrations. Four hours.
10. Epileptic mental disorders. Didactic lecture and clinical demonstrations. Two hours.
11. Psychopathic personalities. Didactic lecture and clinical demonstrations. Four hours.
12. States of mental defectiveness. Two hours.
13. Feeble-mindedness and mental subnormalities. Didactic lecture and clinical and anatomical demonstrations. Two hours.
14. Psychometric tests. Didactic lecture and practical work in making examinations of defectives and delinquents. Six hours.
15. Mental disorders of organic brain diseases. Arterio-sclerotic mental disorders; mental disorders with tumors of the brain and brain injury. Didactic lecture and clinical demonstrations. Two hours.
16. Serological diagnostic demonstrations. Technique and interpretation. Two hours.
17. Attendance at the psychiatric clinic in the medical school at the university. One and one-half hours each week.
18. Practical work in study of cases and preparation of histories on the wards of the hospital.

NEURALPATHOLOGY

A systematic course in the pathological anatomy of mental and nervous disorders was given by Doctor Barrett and Dr. Adeline Gurd, pathologist at the psychopathic hospital. This course covered 14 periods of two hours each. The schedule followed in this course was as follows:

1. Embryological development of the central nervous system. Surface topography of the brain.
2. Study of gross fiber arrangements, and ganglia of brain.
3. Histology of the nerve cell, nerve fiber, neuroglia and cortical architecture.
4. Histology of the spinal cord.
5. Neuronic arrangements of the nervous system. Fiber paths.
6. Localization of nervous function. Correlation of structure and function. Dialectic. Theoretical consideration of aphasia and apraxia.
7. General pathology of the nervous system. Malformations. Diseases of the membranes of the nervous system. Pathological changes in nerve cells. Pathological changes in nerve fibers. Secondary degeneration.

8. Inflammation, repair, and reactive processes in the nervous system.
9. Syphilis of the nervous system. Gummatous formations. Meningitis. Vascular lesions. Histological process of general paralysis.
10. Circulatory disorders of the nervous system. Arteriosclerosis. Haemorrhagic softening.
11. Tumors of the nervous system.
12. Pathology of the spinal cord. Myelitis. Poliomyelitis. Progressive muscular atrophy. Amyotrophic lateral sclerosis.
13. Tabes. Friedreich's ataxia.
14. Pernicious anemia. Multiple sclerosis. Syringomyelia. Hydromyelia. Peripheral neuritis.

NEUROLOGY

The instruction in neurology was given by Dr. Carl D. Camp, associate professor of nervous diseases in the University of Michigan Medical School, in the neurologic wards of the general hospital.

The course in neurology was divided into three parts:

- A. A lecture course designed to cover the subjects systematically.
- B. Clinical demonstrations in which the officer was assigned to a case and allowed one hour to examine, his examination and conclusion being criticized by the instructor before the whole section, and free discussion was encouraged.
- C. A series of formal clinics in neurology, the same as given to the senior medical students in the University of Michigan, with special emphasis on the military aspects of the cases under discussion.

OPHTHALMOLOGY

Instruction in this subject was given by Dr. George Slocum, instructor of ophthalmology in the Medical School of the University of Michigan. The subjects covered were as follows:

A

1. A review of the anatomy of the eye as an optical instrument.
2. Physiology of the accommodation and physiologic optics.
3. Anatomy and nerve supply and physiology of the eye muscles, with binocular vision and fusion, and including the deep origin, relation, and course of the third, fourth, and sixth nerves.
4. Muscular anomalies such as manifest and latent spastic strabismus, including heterophoria.
5. Diplopia and extraocular paralysis and nystagmus.
6. Nerve supply and physiology of the pupillary reflexes including miosis, mydriasis, hippus, and Argye-Robertson pupil.
7. Anatomy and physiology of the retina, optic nerve, chiasm, primary visual ganglia, optic tracts and cortical visual centers.
8. Mechanism of production of choked disc and significance.

The foregoing subjects were taught with the aid of drawings, specimens, and anatomical models.

B

1. Diagnosis of optic neuroses and malingering.
2. The eye manifestations of wounds of the motor and sensory nerve of the eye and of the optic nerve, tracts, radiations, and centers.
3. Visual fields and hemiopia.
4. Eye symptoms produced by intracranial lesions with particular reference to trauma.
5. Eye symptoms of brain tumor, meningitis, multiple sclerosis, myelitis, locomotor ataxia, superior polioencephalitis, general paralysis, exophthalmic goiter, including the various signs associated with exophthalmic goiter, chorea, migraine, and herpes zoster of the eye.

OPHTHALMOSCOPY

1. Direct and indirect methods, including examination of the ocular media with the ophthalmoscope.

2. Ophthalmoscopic appearance of the fundus and the diagnosis of syphilitic, albuminuric, diabetic, leukemic lesions of the fundus and other lesions of the fundus dependent upon general diseases.

3. Differential diagnosis of ocular lesions of the choroid, retina, and the optic nerve with especial reference to their differentiation from those lesions associated with general diseases.

4. Ophthalmoscopic appearance and diagnosis of glaucoma.

Throughout the whole course from one-third to one-half of the time was devoted to the study of cases with the ophthalmoscope with demonstration of the ophthalmic changes peculiar to ocular and general diseases, with especial reference to their practical differentiation.

OTOLOGY

A course of lectures and demonstrations of disorders of the ear in their neurological relations was given by Dr. Carl Furstenberg, instructor of otolaryngology in the medical school. These were given once each week for two hours. The subjects covered were:

1. Functional examination of the internal ear. Disorders of the cochlear portion of the eighth nerve. Vestibular nystagmus.

2. Tests for detecting simulation of deafness.

3. Diseases of the internal ear. Ménière's disease. Arteriosclerosis of the internal ear. Injuries to the internal ear. Syphilis of the internal ear. Hysterical deafness. Occupational deafness.

SEROLOGY

This course was given by Dr. Sobei Ide, serologist to the hospital, and included:

1. Technique of lumbar puncture.

2. Clinical diagnosis of the pathology of the cerebrospinal fluid, Wassermann and gold solution tests.

There were assigned to the Ann Arbor course 78 medical officers. In general it seemed that the plan followed worked out quite satisfactorily. The chief difficulty encountered was the marked difference in knowledge and neuropsychiatric experience for such special training in those assigned to the course. While a considerable number had been actively engaged at some previous time in neuropsychiatric practice, others had no more qualifications for this special training than those of the general practitioner. There was, however, an earnest interest shown by all in attendance and the comments made later by those who had been in active service definitely showed that the plan followed was of great value.

The student officers ordered to the neuropsychiatric schools were on duty status. Between two and three hundred were given this opportunity of acquiring or perfecting neuropsychiatric knowledge.¹⁴

ENLISTED PERSONNEL

The enlisted personnel for the care of nervous and mental cases were made up, as stated, as far as possible from attendants who had had experience in State hospitals. They were assigned to the division of neurology and psychiatry, in some cases by orders, when already enlisted, and in others, by induction into the service, and were sent first, as far as possible, to a training camp.

The shortage of enlisted men experienced in the ward care of mental cases, due in part to the exigencies of the selective service draft, which diverted many such men to other branches of the service, and also to the pressing need for attendants in civilian hospitals for the insane, produced a situation which could

be met only by the utilization of enlisted men of the Medical Department who were not trained in neuropsychiatric work, and in many cases were without hospital experience of any kind. Whenever possible, these men were sent to various centers for a period of training before assignment to duty in neuropsychiatric services.

Conditional to some extent upon the varying supply of special and general hospital personnel, immediate nursing needs, and uncertain time quantities, the training courses gave the attendant an idea of what was expected of him in later service and added new things to his stock in trade. They also allowed a report upon each individual's personality and training to go in to the Surgeon General's Office; on the basis of these reports, groups were selected to man other neuropsychiatric services at home or abroad—groups which had their preliminary adjustment and which could be fitted out with noncommissioned officers who knew them.

PSYCHIATRIC AIDES

The advisability of placing specially trained psychiatric social workers in military hospitals for soldiers suffering from mental and nervous diseases was considered informally, shortly after the outbreak of the war, by the Surgeon General and the National Committee for Mental Hygiene. Many neuropsychiatrists and social workers, who had followed the progress of the mental hygiene movement in this country, had watched with interest the rapidly changing events in the evolution of the comparatively new field of social psychiatry, and especially the work accomplished by social workers at the neurological and psychiatric clinics of general hospitals and at institutions for nervous and mental diseases. It was realized that in a few years a new group of social workers had developed who served ably as assistants to neuropsychiatrists in the various phases of their work. They secured personal and family histories from the patients, relatives, and others, which proved of considerable value to the physicians in the diagnosis of difficult mental conditions; and their personal work in assisting the patients in the adjustment of their social difficulties supplemented the therapeutic treatment of the physicians and thereby achieved more effective results. Their services were appreciated by the administrative departments of the hospitals which formerly had been called upon to perform duties of an essentially social-service character. It was believed, therefore, that there would be as great a need for the service of these workers in the military hospitals as in the civilian hospitals, and that psychiatric social workers could be used as aides to the psychiatrists, to relieve them of duties which could be effectively dealt with by individuals, not physicians, trained along the lines of social psychiatry. The work was still in the experimental stage of its development at the time of our entrance into the war, but the increasing demand, by neuropsychiatrists, hospital executives, and State welfare departments, for social workers experienced in dealing with nervous and mental cases showed that these workers were making a definite contribution in this field of medicine, and were finding a permanent place in the hospital régime.

It was decided, therefore, to arrange for the appointment of a number of psychiatric social workers (psychiatric aides) to be placed in reconstruction hospitals under the jurisdiction of the division of neurology and psychiatry of the Surgeon General's Office.¹² Unfortunately the pressure of work in the Surgeon General's Office at this time (1917) prevented an immediate decision regarding the matter, and not until the early spring of 1918 was the subject taken under official consideration.

In the meantime, in order to prepare for the increasing need for such workers in anticipation of the early return of mental and nervous cases from France, and to be ready for the work of rehabilitation and readjustment, plans were formulated for courses of training in psychiatric social work. For several years before the war there had been a demand for psychiatric social workers that could by no means be met. Yet no training courses existed, except an apprentice training given by the social service of the Boston Psychopathic Hospital to half a dozen students at a time. The director of this hospital^d and the chief of its social service, believing that soldiers suffering from war neuroses would require the same treatment as civilian patients, planned to give an emergency training course at the hospital. A large number of students could be admitted by the use of other institutions for practice work. The permanent charity fund of Boston contributed a sum of money to make the course possible. By chance it was learned that Smith College wished to use its equipment during the summer for some educational war work, and was already considering a course for some type of mental hygiene worker. At the same time the National Committee for Mental Hygiene, facing the problem involved in the rehabilitation of returned soldiers suffering from nervous and mental disorders, was convinced of the need of training lay workers to assist physicians in the care of neuropsychiatric cases, and a committee was appointed to consider the matter.

A combination with the Boston group was effected, by which the training course for psychiatric social workers was given by Smith College under the auspices of a committee of psychiatrists appointed by the National Committee for Mental Hygiene, with the director of the Boston Psychopathic Hospital as chairman.¹⁵

Thus was the first course for the training of psychiatric social workers established in this country. Within a month 63 students assembled at Smith College to take the course. They represented 21 States and 20 colleges. Thirty-eight previously had been engaged in other occupations, 12 as teachers, 16 as social workers, 3 as librarians, 3 as secretaries, and 4 in miscellaneous forms of work. The students for training were distributed among four cities, Baltimore, Philadelphia, New York, and Boston, for six months of practical case work. The term of practice work was made as short as possible because the graduates would be needed in the military hospitals even before they were ready.

The object of the course was to prepare social workers to perform three functions, if necessary, or any one of the three that might be required: (1) To secure the social history essential to medical diagnosis by interviews or correspondence with informants, or by interviewing patients; (2) to assist the physician in psychotherapy by such means as encouragement, explanation, reeducation;

^d The late Dr. Elmer E. Southard.

(3) to promote the social adjustment of patients upon discharge. The technique of social case work, taught by lecture and practice, was the basis of the course. It was recognized that an eight months' course in a subject dealing with something so complex as human personality must be very superficial at best. But the aim was to drill the student in the fundamental habits of mind required for future development in her work, a professional attitude, adaptability, the habit of observation, and the psychiatric point of view.

The graduates of this first course for the most part carried out their purpose, working in military hospitals until these hospitals were taken over by the United States Public Health Service, when they continued in them under the American Red Cross. Some of them took up work in State hospitals, in social agencies, and in mental hygiene societies.

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CHAPTER III

PROVISIONS FOR CARE OF MENTAL AND NERVOUS CASES

With an army as small and as scattered as ours was before the World War, it was difficult to make proper provisions for the care of the insane. The actual number of cases requiring prolonged treatment at the hands of the Government was not large, not exceeding 200 annually.¹ These cases occurred at widely separated points. Native soldiers in our island possessions who became insane were cared for in local institutions, but for others the only hospital facilities provided were at St. Elizabeths Hospital in Washington, D. C. In the United States the only wards maintained at all for the insane in the military service, with the exception of a few beds in the basement of Walter Reed General Hospital, were 50 beds in a building, which also held prisoners, at the Letterman General Hospital, San Francisco,² and in these 50 beds were collected cases from the Western Department, and especially from the Philippines.

The ultimate destination of all cases in which recovery was not prompt was St. Elizabeths,³ and during the long interval which was required for commanding officers to obtain the necessary authority for transfer, the patients were kept in such quarters as were available at the place of their mental breakdown. Some, as long as they could be regarded as harmless, were retained in the wards of the local hospital, but more frequently they were lodged in prison wards. In certain places portable steel cages were utilized for patients regarded as particularly dangerous. The practical result of this whole system was that weeks, sometimes months, elapsed before efficacious treatment could be employed.

The great increase of the military forces for the World War required a corresponding enlargement of the provisions for the care of the insane. The larger Army demanded many receiving hospitals, or wards, speedier methods of disposal of cases which were not a legitimate charge on the Federal Government, and the establishment of rational and prompt means of treatment for the patients whom the Army would be called upon to maintain. Such a program required changes in the methods of military hospitalization, in respect of admissions to civil hospitals, and in those Army regulations which controlled the evacuation and final disposal of the insane.

IN BASE HOSPITALS

NEUROPSYCHIATRIC WARDS

During the World War, provision was made for neuropsychiatric wards in all camp, cantonment, and department base hospitals. The first plans drawn by the War Department for a building for nervous and mental patients were labeled "Isolation-insane."⁴ Later, wards in which these patients were cared for were officially designated "Psychiatric wards."^a The transition from one to the other was more than a mere change in names.

^a See Vol. V, p. 69, for plans of this ward.

"Isolation-insane" was all the term implies in misunderstanding and professional discouragement and indifference. "Psychiatric ward," on the other hand, approximated, at least, and in some places largely attained, what the term implies in hospitalization—understanding and professional hope and activity. The "isolation-insane" building was a long rectangular building with windows and doors heavily barred on the outside and heavily screened on the inside, the interior broken into small cell-like structures stoutly maintained.⁵ The psychiatric wards, as will be more fully described later, were open, bright, airy wards, in some hospitals, without bars or mesh of any kind. The "isolation-insane" building was built in connection with the base hospital in a few of the early cantonments.⁶ The psychiatric ward was built in the majority of the cantonments, and these early wards represent the first step in the transition that took place in the Army. It was considered that each cantonment would need a special ward for nervous and mental patients, and plans designed by the National Committee for Mental Hygiene for psychiatric units of 30 beds were adopted for the cantonment base hospitals.⁷

The following equipment was proposed and approved for these units:⁷

Electrical:

- 1 No. 7 galvanic, Faradic, and sinusoidal wall cabinet, oak or mahogany, with meter, for direct current, 35 inches high, 22 inches wide, 11½ inches deep, with the following accessories:
 - 1 pair No. 649 green and red cords.
 - 1 No. 756 plain handle.
 - 1 No. 757 interrupting handle, style "A."
 - 1 No. 1635 asbestos pad electrode, 5 by 7 inches.
 - 2 No. 728 round asbestos disk electrodes.
- 1 motor generator set, ½ ampere, 110 volts, for operating wall cabinet on alternating current.
- 1 Excell high-frequency machine, with hot wire meter, oak or mahogany finish (no accessories).
- 1 rotary converter for operating Excell high-frequency machine on the direct current.
- 1 Excell high-frequency portable machine, 10 inches high, 14 inches wide, 10 inches deep (no accessories).
- 1 therapeutic lamp with plug and inlet cable.
- 2 pounds lead foil, about 0.008 mm.
- 2 lengths of 5 feet each No. 653 heavy insulation high-frequency cord.
- 1 improved auto-condensation chair pad.
- 1 fulguration handle with set of three electrodes.

Electrical—Continued.

- 1 surface vacuum electrode.
- 1 vacuum electrode handle and sleeve cap.

Hydrotherapeutic:

- 1 combination douche apparatus, No. P-2281, without steam connection.
- 2 immersion baths, No. P-2108.
- 1 electric cabinet, type B.

Psychological:

- 1 steel tape.
- 1 form board.
- 1 imbecile tests (Knox)
- 1 picture memory test.
- 1 pictorial completion test.
- 1 construction puzzle A (Healy).
- 1 construction puzzle B (Healy).
- 1 aussage test.
- 1 500-learning test.
- 1 McCalliss test cards.
- 1 stop watch.
- 1 material for Binet-Simon test.
 - 500 record blanks for scoring.
- 1 material for Yerkes point scale.
 - 500 record blanks.

Diagnostic:

- 2 reflex hammers.
- 2 stethoscopes (A/4832).
- 2 stethoscopes (A/4800).
- 1 blood pressure instrument.
- 1 hand centrifuge.
- 1 dozen lumbar puncture needles.
- 1 Zappaert-Ewing blood pressure counting chamber.
- 2 red blood counting pipettes.
- 2 white blood counting pipettes.

Diagnostic—Continued.

- 1 outfit for taking Wassermann blood specimens.
- 2 urinometers.
- 1 head mirror.
- 1 head band.
- 1 microscope.
- 1 Fuchs-Rosenthal's counting chamber.
- 2 white blood counting pipettes for spinal fluid.
- 6 gross slides, 3 by 1 inch.
- 10 boxes cover glasses, 22 by 22 mm.
- 200 test tubes, 6 by $\frac{5}{8}$ inch.
- 2 alcohol lamps.
- 1 dozen urine sedimentation glasses.
- 1 ophthalmoscope with electric battery attached.
- 2 pupil lights.

Miscellaneous:

- 1 salvarsan administration outfit.
- Canvas camisoles with long sleeves.
- Protection sheets of canvas.
- Stretcher cots for transporting short distances the disturbed and delirious patients.
- Leather straps with buckles, 5 feet (3 straps to each cot).
- Tube-feeding outfit.
- Rubber sheets.
- Fountain syringe.
- Bed pans and hand basins.
- Physician's emergency handbag.
- Hypodermic syringe.
- Hypodermic tablets of morphia, strychnia, hyoscine hydrobromate, paraldehyde, magnesium sulphate, caseara, compound earthartie pills.

This new ward was so arranged as to care for any type of patient that might be admitted—one portion, for the much disturbed, equipped with continuous baths, one for the semidisturbed, and another for the convalescent or quiet patients. Each portion was separated from the others; small dormitories were provided in each with rooms for individual patients in the disturbed section. It was intended that a medium iron-wire mesh should be used on the windows of these wards and not bars; through an inadvertence, however, some of the early building plans issued by the War Department called for bars.⁴ The situation of the local psychiatric officers with proper ideas as to physical standards was thereby made more difficult and in consequence the physical standards of the wards varied, depending upon the standards of the local officer himself, and his ability to convince his commanding officer that hospitals and not jails were being built. For a lieutenant or captain new to military service to convince a commanding officer of the "isolation-insane" school was no small task. But many of them succeeded. There were to be found, therefore, wards heavily barred, wards with bars confined to that part of the building used for disturbed patients, with mesh for the rest of the ward, wards with mesh for the disturbed portion and neither bars nor mesh for the part used by convalescent patients.

While the physical standards of the wards varied from camp to camp, there existed almost throughout a uniformly high standard of care and treatment. Although some of the wards appeared more like jails than hospitals on the outside, they were hospitals in fact on the inside.

The neuropsychiatric wards of the base hospital served a useful purpose. During the early days of the World War, they were used chiefly for the examination and observation of recruits referred by the division psychiatrist. Later, they served the mental health needs of the various commands occupying the camps at different times. Since it was the understanding from the beginning that the insane would be discharged from the Army as quickly as possible, the neuropsychiatric wards were intended for temporary care only. Quite frequently, however, it was found that patients had to be retained in the wards

for a considerable length of time, due to various unforeseen circumstances. These wards made expert care and treatment immediately available to any soldier becoming ill in the camp. With no more formality than obtained in entrance to the medical or surgical wards, patients could be brought to the ward especially provided for them. Patients who developed nervous or mental symptoms in other wards were transferred without formality to the special wards. Soldiers who, because of a nervous or mental condition, ran counter to the military laws and arrived at the guardhouse were transferred to the special wards. General prisoners, about whose mental condition there was question, were sent to the wards for observation. Recruits found unfit for military service because of mental disease and awaiting discharge were cared for in the neuropsychiatric wards until such time as proper arrangements could be made for their return home. Up to the time of the beginning of the armistice, the neuropsychiatric wards of the base hospitals cared for about 28,000 patients.⁸

IN GENERAL HOSPITALS

The neuropsychiatric wards of the general hospitals of the Army were established in order to relieve congestion in the neuropsychiatric wards of the base hospitals. It had been thought that the neuropsychiatric wards of the base hospitals would be adequate to care for all cases of nervous or mental disease arising in the camps. It was soon found, however, that the rate of admission was such and the delays incident to transfer and discharge so great that further provision would be necessary. It was difficult to maintain an adequate personnel with the requisite experience at so many small units. It was decided, therefore, to use the base hospital wards as clearing houses and for emergency treatment only and to establish additional neuropsychiatric centers convenient to the centers of military population to which patients could be transferred for longer periods of treatment.

Two methods for providing these additional facilities were considered: (1) The establishment of special neuropsychiatric hospitals; (2) the establishment of neuropsychiatric wards in connection with the Army general hospitals. Both plans obviously had advantages and disadvantages. It would have been easier, no doubt, to staff special hospitals more satisfactorily, as there needed to be assigned to them only officers with neuropsychiatric training. This would have reduced the friction and misunderstanding likely to arise when superior officers were unfamiliar with the professional problems of their juniors. A greater freedom, probably, might have been permitted patients; closer supervision and direction to the immediate needs of the patients might have been had of the local machinery of reconstruction. On the other hand, had special hospitals alone been provided, professional isolation would have been increased and emphasized.

The greatest obstacle to neuropsychiatry in both civil and military practice has been the barrier that tends to separate nervous and mental diseases from all other diseases, and it was thought by some that, in so far as the Military Establishment was concerned, the greatest good, both to the practice of neuropsychiatry and to the patients who were dependent upon it, would be accom-

plished if a determined effort were made to break through this barrier and to place the mental patient on a par with patients incapacitated by reason of other diseases. Not until commanding officers and others in authority realized that their responsibilities for the medical, the surgical, and the mental cases were the same was it considered possible to accomplish those things of which the well-trained neuropsychiatric officer is capable. It was thought that the establishment of neuropsychiatric wards in the general hospitals would emphasize this responsibility.

Such a course, however, was not without its dangers. As a part of a general hospital the neuropsychiatric ward is a section under internal medicine, and the chief of the medical service has supervision over the neuropsychiatric ward. The success of the ward, therefore, is in part dependent upon the attitude of this officer and the ability of the chief of the neuropsychiatric section to cope with the double opposition that might be met in this officer and the commanding officer. As a matter of fact, this plan of hospital organization was a hindrance, in some instances, to the proper conduct of the neuropsychiatric work. On the whole, however, it did not cause the difficulty that might have been expected. In most hospitals the chief of the medical service assumed but a nominal oversight of the neuropsychiatric wards and placed full responsibility in the hands of the chief of the neuropsychiatric section.

It is interesting to record, in this connection, that the officer frequently quickest to appreciate the service of the neuropsychiatric officer and to give him heartiest support was the line officer. Officers of the Medical Department of the Regular Army also, in most instances, gave their support. The officers with whom the neuropsychiatrists had most frequent difficulties were the officers of the Medical Reserve Corps, commissioned from the civil medical profession. The significance of this observation lay in the sidelight it threw upon the teaching of neuropsychiatry in the American medical schools. The line officer frequently was faced with problems in personality and conduct that frankly he did not understand. He turned gladly, therefore, to the neuropsychiatric officer when he found that that officer could be of assistance to him. The officers of the Medical Department of the Regular Army for a number of years have been given a systematic course in neuropsychiatry. The larger knowledge manifested itself in a quicker understanding and appreciation of the problems of the neuropsychiatrists. The greater number of the officers in the Medical Reserve Corps, however, had had practically no instruction in neuropsychiatry. In most instances their school instruction had consisted of a few lectures, together with a visit to a neighboring institution, where a few striking and bizarre cases of chronic mental disease had been demonstrated to them. Their experience in practice largely had been limited to the sterile forms of legal commitment. Many medical officers, however, were as frank as line officers in admitting their lack of understanding of nervous and mental patients and spent many hours, when possible, in the wards studying patients in an earnest effort to inform themselves upon a subject in which they found a growing interest, and a subject of increasing value to them. Aside from the fact that the establishment of neuropsychiatric wards in the general hospital would be an important step in breaking down the barrier that tends to isolate mental patients, and that through the presence of these wards the medical officer would come

to a better understanding of the mental patient, the standards, methods of treatment, and possibilities of the modern neuropsychiatric clinic, it was realized that expert care would be available for patients on other wards who were showing nervous and mental symptoms, and that, on the other hand, expert consultation in other fields would be available to the neuropsychiatrists.

The plan adopted, therefore, was that of special wards in the general hospitals, and five general hospitals suitably situated geographically were selected for the purpose:⁹ The Walter Reed General Hospital, Washington, D. C.; United States Army General Hospital No. 6, Fort McPherson, Ga.; United States Army Base Hospital, Fort Sam Houston, Tex.; United States Army General Hospital No. 26, Fort Des Moines, Iowa; and the Letterman General Hospital, San Francisco, Calif. United States Army General Hospital No. 4, Fort Porter, N. Y., was a special psychiatric hospital opened especially for mental patients returning from overseas, although it received also, at times, patients from neighboring camps.⁹ United States Army General Hospital No. 13, Dansville, N. Y., and United States Army General Hospital No. 34, East Norfolk, Mass., were also neuropsychiatric hospitals, but for overseas patients, as were the special wards at United States Army General Hospital No. 1, Williamsbridge, N. Y. United States Army Hospital No. 30, Plattsburg, N. Y., was established for nervous patients from overseas, although some patients were transferred there from American camps.⁹

Later, with the more rapid return of patients from overseas, further neuropsychiatric centers were opened in connection with United States Army General Hospital No. 25, Fort Benjamin Harrison, Ind., and United States Army General Hospital No. 28, Fort Sheridan, Ill.⁹ There was also a single neuropsychiatric ward at United States Army General Hospital No. 2, Fort McHenry, Baltimore, Md.⁹ The original wards, however, and those designed to serve as a reservoir for the neuropsychiatric wards of the camp base hospitals, were those at Walter Reed, Fort McPherson, Fort Sam Houston, Fort Des Moines, and the Letterman General Hospital.

Patients, whether officers or enlisted men, who presented symptoms of mental disease were transferred to these centers for care and treatment in the same manner as other patients. Such transfers were effected as follows: The patient whose symptoms were considered as requiring special observation and treatment was ordered for that purpose to the hospital designated. The orders were obtained from The Adjutant General through the Surgeon General, having been first initiated by the commanding officer at the point from which the patient was removed. Thus the patient, whether officer or private, with mental symptoms, was transferred not as an insane person, but as any other patient. Except in violent or essentially incurable cases the patients were retained in these centers for a period of time not to exceed four months.⁹ For the purpose of preventing the reenlistment of soldiers who had suffered from psychoses, it was recommended to the commanding officers of the neuropsychiatric centers to which mental cases were transferred that the fact be noted on the discharge form.

⁹ By these means, the Army regulations concerning the disposition of the insane were not resorted to until a reasonable time of observation had elapsed. This subject is discussed further in Chap. VII.

By relieving base hospitals of mental cases in this manner, congestion in the general medical services was lessened and a higher standard of care, with a proportionate increase in the ratio and speed of recoveries, was obtained. There was effected an economy of personnel, for even if it had been possible to supply base hospitals generally with a sufficient number of psychiatrists to treat mental cases, it would have been extravagant in the extreme. With the speedy evacuation of all cases presenting mental symptoms, it was possible for the neuropsychiatric work in a base hospital to be performed by one energetic and competent medical officer. As things turned out this arrangement was imperative, for, with the limited number of neuropsychiatrists available, the need of these officers at other points in the medical service did not permit the detail usually of more than one at a base hospital.

The suddenness of the armistice brought about a great change in many of the arrangements which had been made for the treatment of nervous cases. Except for a geographical rearrangement of hospitals with reference to the homes of patients, there was no change in the plan of care for mental cases. It was found, however, as will be discussed in greater detail in the following pages, that war neuroses had ceased to exist as a problem, in that the number of cases from the American Expeditionary Forces dwindled, and those under treatment in this country made rapid recoveries. The cases which appeared in the home camps were less influenced by the change in the military situation. At Plattsburg Barracks, N. Y., where a special hospital was established for war neuroses, cases were put back on duty status faster than they were received, and consequently plans for another hospital of 1,000 beds at Carlisle Barracks, Pa., were abandoned.

The practical end of the war brought into prominence the advisability, imperfectly realized before, of sending patients who were to undergo continued treatment to hospitals in the immediate vicinity of their homes. This required a rearrangement of hospital facilities for neuropsychiatric cases, especially with regard to the cases of epilepsy, and injuries of the peripheral nerves. It was planned, moreover, that cases of this character, as well as the insane, who required care after discharge from the Army, would be provided for in the vicinity of their homes by the Bureau of War Risk Insurance.¹⁰

CLASSIFICATION AND DISTRIBUTION OF OVERSEAS PATIENTS

The importance of accurate clinical diagnosis as a basis for the classification and distribution of patients can not be insisted upon too emphatically as an important feature of treatment. From the dressing stations and field hospitals at the front, through the base sections and into the home stations, this principle is cardinal to successful functioning of the medical department of an army.

In this country the two most important sorting points were the ports of debarkation at Hoboken, N. J., and at Newport News, Va., and of all the classes of cases returned, perhaps none presented such perplexing clinical problems as the nervous and mental cases. Many, if not most, of these patients were returned without records and without notes, the only indicating sign to the examiners who met them at the ports being a diagnosis written out or initialed on the field card. Then, in the cases of the psychoses and neuroses, a change

had often come over the patient since he was last examined by a medical officer, so that what may have been a correct diagnosis on leaving France was no longer correct, on arrival. Also, because of the refusal of the Navy, which had charge of all patients at sea, to transport large numbers of mental cases on any one ship, medical officers stationed at the French ports were forced, in order to evacuate their hospitals, to mark some patients as "N" or nervous, when in reality they were mild mental cases.

To insure speedy distribution of the neuropsychiatric cases returned from abroad, psychiatrists were assigned to the ports of debarkation at Hoboken and Newport News.¹¹ Cases were classified immediately upon arrival and evacuated to the proper hospitals as soon as possible.¹¹ The following hospitals were designated by the Surgeon General on December 9, 1918, for overseas mental and nervous cases:¹²

EPILEPTICS AND MENTAL DEFECTIVES

Walter Reed General Hospital, Takoma Park, D. C.
 Letterman General Hospital, San Francisco, Calif.
 General Hospital No. 1, Williamsbridge, N. Y.
 General Hospital No. 6, Fort McPherson, Ga.
 General Hospital No. 25, Fort Benjamin Harrison, Ind.
 General Hospital No. 26, Fort Des Moines, Iowa.
 General Hospital No. 28, Fort Sheridan, Ill.
 General Hospital No. 29, Fort Snelling, Minn.
 Base Hospital, Fort Sam Houston, Tex.

INSANE

General Hospital No. 1, Williamsbridge, N. Y.
 Walter Reed General Hospital, Takoma Park, D. C.
 Letterman General Hospital, San Francisco, Calif.
 General Hospital No. 4, Fort Porter, N. Y.
 General Hospital No. 6, Fort McPherson, Ga.
 General Hospital No. 13, Dansville, N. Y.
 General Hospital No. 25, Fort Benjamin Harrison, Ind.
 General Hospital No. 26, Fort Des Moines, Iowa.
 General Hospital No. 28, Fort Sheridan, Ill.
 General Hospital No. 34, East Norfolk, Mass.
 Base Hospital, Fort Sam Houston, Tex.

NEUROSES, FUNCTIONAL

General Hospital No. 30, Plattsburg Barracks, N. Y.

DRUG ADDICTS AND INEBRIATES

General Hospital No. 31, Carlisle, Pa.

With the exception of General Hospitals Nos. 4, 30, and 34, these hospitals were chosen for the establishment of special neuropsychiatric services, first, because they would reduce transportation to the minimum and at the same time give wide geographical distribution; second, because they would enable all cases to be treated in the vicinity of their homes; third, this plan made for the most economical utilization of the existing facilities.⁹

General Hospital No. 4 was for a time devoted almost entirely to mental cases returned from France.¹³ As the bed capacity was soon taken up, it was necessary for General Hospitals Nos. 13 and 34 to be taken over for the care of insane cases. As the number of cases returned from abroad decreased and the population of these hospitals diminished, all the cases were transferred to the Soldiers' Home for Disabled Volunteer Soldiers at Hampton, Va., which previously had been Debarkation Hospital No. 51. On May 1, 1919, it was made General Hospital No. 43, for the care and treatment of mental cases. This hospital was used also as a classification hospital for other nervous conditions received from overseas through the port of Newport News.¹⁴ At the time of the transfer of these cases, General Hospitals Nos. 13 and 34 were closed.¹³

There was also a neuropsychiatric service in the embarkation hospital at Newport News.¹⁴ This service showed a steady increase in mental cases from the local camps from the beginning, augmented by the return of overseas cases.

Eventually all mental cases from the American Expeditionary Forces were returned through the port of Newport News and taken directly to the hospital at Hampton, without long travel and with economy of personnel, as the patients were then treated in one hospital instead of three.¹³ The procedure followed is given below.¹⁴

PORT OF EMBARKATION, NEWPORT NEWS, VA.

After November 11, 1918, emphasis was placed upon the reception of neuropsychiatric cases from France. This had long been a function of the embarkation hospital where patients were received in small groups; of 100 admissions to the neuropsychiatric ward in August, 1918, for instance, 30 were from overseas. By September 4, 1918, the accommodations at this hospital (for 38 insane and 60 nervous patients) were manifestly insufficient even for the immediate future. At this time it was recommended to the surgeon that 180 more beds be provided, this special need to be merged in the general need of a large debarkation hospital. The old Soldiers' Home at Hampton, which was transferred to the War Department by act of Congress, when opened as Debarkation Hospital No. 51, on November 17, 1918, contained 39 beds for the care of acute psychoses and 110 beds for neuroses. In January, 1919, accommodations for 50 more psychoses were provided and 2 wards of 60 beds each were nearly ready.

Before these new accommodations were available the U. S. S. *Aeolus* docked, on October 13, with 243 cases, divided as follows: Psychoses, 127; feeble-minded, 18; epileptics, 55; neuroses, 39; and 3 cases of organic disease of the nervous system. No warning was given; the force of attendants at embarkation hospital was crippled because of the influenza epidemic; other ships were due. Under these circumstances special trains were requested to carry these patients directly inland, and after a day's wait the psychoses and mental defectives were sent to Fort McPherson, Ga., and the others to Plattsburg, N. Y. Two patients hung themselves on the ship, one on the last day of the voyage and one while the transfer from boat to train was going on. The ship of necessity carried these patients between decks without lights from sunset to sunrise. The train trips were made without incident.

When the debarkation hospital was opened on November 17, its first large group of patients was a convoy of 300 nervous and mental cases. Notice had been sent ahead and a psychiatrist had gone out to meet the ship and classify the patients, but unfortunately the ship did not stop to take on a pilot. At the pier, a hospital boat was brought alongside, received the patients, and landed them at a dock inside the hospital grounds. One man dove overboard but was rescued unharmed. These patients were successfully transferred to interior hospitals.

Subsequently other ships, each carrying two to three hundred mental cases, were unloaded and a procedure developed which gave very satisfactory results in the transfer of these patients from ship to hospital wards. In brief this plan was as follows:

(1) On advance information the neuropsychiatrist, with a detail of experienced enlisted men, reported at the pier as adviser to the medical superintendent of transports. (2) The medical officer and noncommissioned officer in charge of the detail boarded the ship and secured all possible information regarding the behavior of the patients from the ship's surgeon and attendants. (3) Quarters on the hospital boat or the routes to the ambulances were inspected and attendants placed at strategic points, gangways, ports, stairways. (4) Patients from whom trouble could be expected were each placed in charge of an attendant and landed first. (5) Milder mental cases were grouped and taken next with several attendants. (6) At the receiving hospital patients were taken off in the same order and thus the more disturbed could be placed in the most protected ward and the patients who needed no special care could be admitted to the general medical wards when necessary.

The custom of the hospitals with regard to diagnosis of general cases was followed. This meant the filling in before 9 a. m. on the day following admission of a "Classification for distribution" form, of which a synopsis is here given:

- 1-2. Name and identification.
3. Diagnosis
4. Classed as—
 - Psychoneurosis.
 - Epilepsy.
 - Psychosis.
 - Mental defect.
 - Convalescent.
 - Peripheral nerve injury.
 - Other medical groups; other surgical groups.
5. Ambulatory or bed patients.
6. Individual attendant Special care of litter.
7. Recommendations

It was obvious that the future care of patients was dependent to a considerable extent upon the accuracy with which the diagnosis was made prior to entrainment for interior hospitals. If conditions were such as to limit the time which the neuropsychiatrist might expend in making the diagnosis the ratio of accuracy would be lowered. After numerous experiences the neuropsychiatrist of the port arrived at the conclusion that while, theoretically, the interests of the patient and the service alike would be best served by allowing more time for making the investigations upon which an accurate diagnosis must rest it was impracticable to secure more time without greatly interfering with general evacuation operations. In other words, a port of debarkation, by its very nature can not become a place for scientific niceties of diagnosis. Therefore an endeavor was made to combine speed with accuracy. That this succeeded is well illustrated by the experience and experiments described below.

A large group (300) was landed at the hospital dock at 6 p. m., whence they were enrolled and sent to the ward with Form 55a made out. The ward surgeons assigned each man to a bed and entered the number of the bed on the 55a slip. Supper was then served. Then four men at a time were taken, from each of the five wards, for delousing. Field cards from overseas arrived at the wards and were matched with the 55a forms, always with some discrepancies which took time to adjust. A neuropsychiatrist stationed himself at the door of each ward, called a patient, read the field card, entered a diagnosis, and checked the appropriate class.

Many diagnoses could be confirmed in a few seconds; epilepsy, for instance, by a history of convulsions antedating Army service, or undiagnosed psychosis by the presence of any delusional remnant or behavior disorder. It should be remembered that such a diagnosis had little of the significance that it had in civil life, merely meaning at the port that the psychotic was going to a hospital with the proper specialists to care for or discharge him. Therefore, when epilepsy was the term used to describe a disease characterized by convulsions which first appeared under shell fire, a change was made to psychoneurosis in order to make

sure that the patient would receive specialized treatment. The diagnosis "constitutional psychopathic state" covered such varied conditions that at first it seemed best to change it; later it was retained and its constituents separated by checking under classification, "psychosis, epilepsy, psychoneurosis, mental defect," according to the treatment the patient required. In questions involving mental defect, patients were referred to a psychologist for individual examination.

After diagnosis and classification had been made by a specialist, the patient took his papers to the ward surgeon who completed them. The distribution papers were then ready with the papers from other medical and surgical wards for early action the next day after admission; from them were made up the travel orders which caught the patient in a system which landed him at an interior hospital. At times patients would remain several days before entraining, and many valuable clinical notes could be entered on their field cards. Unless an injustice was being done to a soldier, it was found best not to alter his diagnosis, since this meant disarranging complicated travel orders.

Hospital trains formed a medical unit separate from the hospitals. For mental patients, however, the hospitals were asked to furnish additional neuropsychiatric attendants. The 35 enlisted men sent to the port by the section of neuropsychiatry, "to escort nervous and mental cases from the port to the general hospitals," were used here, as well as in the transfers from ship to ward and from ward to train. Berths were made without curtains and toilet rooms were specially guarded.

Efforts were made to improve this routine. Attention was first centered on the short time allowed for diagnosis in these difficult cases. As stated above, careful consideration made the neuropsychiatrists feel that no increase in time should be asked if such an increase would give mental patients second place in travel arrangements.

Next the question of discharging patients at the port was raised in an effort to help clear beds in interior hospitals. Certificates of disability for discharge were made out for 30 epileptics whose convulsions clearly antedated their enlistment and where treatment could not be expected to improve their condition. Contrary to some presuppositions, no difficulty was experienced in getting convincing histories. The result was that these patients were held about a month and then sent under escort to widely separated homes, a procedure which resulted in a multiplication of travel orders and a tying up of many Hospital Corps men in travel. The scheme was abandoned as having no advantage over immediate distribution to hospitals near homes.

PORT OF EMBARKATION, HOBOKEN, N. J.

For a time the neuropsychiatric cases received at the port of New York were debarked at Ellis Island, where they were cared for in special wards until they could be transferred to special hospitals for nervous or mental patients. The stay at Ellis Island was usually brief, the patients being transferred in the course of a very few days. Because of this brief stay, little attempt was made at treatment of cases there, though every effort was made to provide for their care and for such emergency treatment as was required. Later the Messiah Home for Children in New York City was obtained by the Surgeon General for use as a clearing hospital (as part of United States Army General Hospital No. 1) for patients arriving at the port of New York (Hoboken), and the special wards at Ellis Islands were given up.¹⁵

The neuropsychiatric service at Hoboken was established in July, 1917. A director of neuropsychiatry was appointed by the surgeon of the port of embarkation as his personal representative to direct all the neuropsychiatric activities at the port. The duties of this officer, who had for years previously had charge of the largest psychopathic reception service in the country, were as follows: (1) To advise, assist, and cooperate in the organization of a special hospital for the care and evacuation of nervous and mental cases.

(2) To organize and establish special wards in various hospitals within the port for the brief and temporary care of such cases. (3) To make official visits and act as consultant and to assist and advise with the commanding officers of the various hospitals in the examination, classification, and the general care of nervous and mental patients. (4) To examine and report special psychiatric cases that might arise within the port, including the mental examination of those who were charged with criminal offenses and in whom the question of mental responsibility arose. (5) To advise the personnel officer in the office of the surgeon in the assignment of medical officers having neuropsychiatric training, to various hospitals as the necessity required.

Because of the special and technical character of the work, the relation of the director to the neuropsychiatric service in the port and particularly to the special hospital, ward 55 (Messiah Home), General Hospital No. 1, had of necessity to be very intimate.

Owing to the fact that nervous and mental patients were returned in large groups, the accommodations at the special hospital (Messiah Home) proved temporarily inadequate and, at various times, many of the milder cases had to be distributed to other hospitals until evacuated, which complicated the work of the division considerably. Notwithstanding this, in a service which is fraught with danger and where accidents, injuries, abuses, and complaints are apt to be frequent, such occurrences were happily rare.

In transferring patients from ocean transports to the debarkation hospitals and from the debarkation hospitals to hospitals in the interior, patients were accompanied by attendants experienced in the transportation of mental and nervous cases. Reports of the elopement of patients and injuries received while in transit were few, and complaints as to condition of patients arriving were almost negligible.⁹ The following is a description of methods and equipment used in the transportation of mental patients:¹⁶

The equipment needed and the arrangements to be made for transporting mental cases will depend to a great extent on the mode of conveyance (train, automobile, steamship, etc.), the distance to be traveled, and the types of cases to be transferred. Under all circumstances, it is of first importance to provide trained attendants and nurses and to have in charge a physician experienced in the management of mental cases.

If a large body of patients is to be transferred an effort should be made to classify the cases into groups, according to the severity of the symptoms and the amount of supervision needed.

Mild and tractable cases.—These may be transferred by train or ship with little difficulty if their physical condition is good, and if properly supervised by trained attendants very little restriction of their activity is necessary. In railroad cars the doors should be locked and the windows kept down, except when opened for purposes of ventilation, and then they should be guarded by attendants.

Suicidal cases.—Careful watching and considerable restriction of liberty on train and ship are necessary. Actively suicidal and disturbed cases must be managed as are excited patients next referred to.

Excited and assaultive cases.—Doors must be kept locked and windows closed and blocked. Wire screens over the windows (on the inside) may be used to prevent breaking of glass. Very disturbed cases should be transferred in a compartment sleeping car so that each patient has a room. In these cases canvas camisoles, with long sleeves, should be used to control destructive tendencies and prevent assaults. Some violently excited cases, or those with self-mutilative tendencies, require to be kept in bed under a protection sheet. This can not

be applied unless an ordinary single bed (hospital style) is available. In transferring excited patients short distances by ambulance, or from hospital to train or ship, stretcher cots should be used and leather straps provided for confining the patient to the cot.

Delirious cases.—As these patients are usually seriously ill, they should not be transported long distances unless it is absolutely necessary. They should always be moved on a stretcher cot and placed in bed as soon as possible on train or ship.

Other equipment required for the handling of disturbed and uncleanly patients should include plenty of water and hand basins for cleansing purposes.

Ample supply of underclothing and bedding, and rubber sheets to be used under unclean patients.

A tube feeding outfit, consisting of a rubber tube with funnel attached (tube should be small enough to introduce through the nostril).

A physician's hand bag or kit containing the usual emergency outfit, including also hypodermic syringe and tablets of morphia, strychnia and hyoscine hydrobromate; paraldehyde, magnesium sulphate, cascara and compound cathartic pills should be provided. Fountain syringe and bed pans are also needed.

STATISTICAL DATA

There is no accurate record of the date and number of the first nervous and mental cases returned from the American Expeditionary Forces, but the first mental cases from overseas to be admitted to the first special hospital for such cases (General Hospital No. 4) was in the month of February, 1918, and the first cases of war neurosis were admitted to General Hospital No. 30, in May, 1918.¹⁷

The following neuropsychiatric cases had been returned from overseas up to June 30, 1919:¹⁷

	Total	Hoboken	Newport News
Psychoses (insanity).....	3,597	2,715	882
Constitutional psychopathic states.....	504	149	355
Epilepsy.....	416	302	114
Mental deficiency.....	762	410	352
Psychoneuroses.....	2,888	1,675	1,213
Alcoholism.....	51	51	
Drug addiction.....	6	6	
Recovered.....	95	95	
Total.....	8,319	5,403	2,916

The following is a list of the mental and nervous patients transferred to general, base, and special hospitals from the ports of Hoboken and Newport News, between April, 1918, and June 30, 1919, with the hospitals to which they were admitted:¹⁸

	Mental		Mental defective		Neurosis	
	Hoboken	Newport News	Hoboken	Newport News	Hoboken	Newport News
Letterman, San Francisco	36	14	10		7	2
Walter Reed, Takoma Park, D. C.	171	41	54	1	11	1
No. 1, Williamsbridge, N. Y.	94	37	62	16	35	9
No. 2, Fort McHenry, Md.	61	42	4	1		14
No. 3, Colonia, N. J.						2
No. 4, Fort Porter, N. Y.	784	340	1		57	36
No. 5, Fort Ontario, N. Y.	3	3	1		14	6
No. 6, Fort McPherson, Ga.	277	228	86	10	22	1
No. 9, Lakewood, N. J.	1				12	15
No. 10, Boston, Mass.		1				1
No. 11, Cape May, N. J.						9
No. 14, Fort Ogletborpe, Ga.	20				1	
No. 25, Fort Benjamin Harrison, Ind.	152	209	38	8	3	
No. 26, Fort Des Moines, Iowa	112	6	29		7	7
No. 27, Fort Douglas, Utah					1	1
No. 28, Fort Sheridan, Ill.	154	65	30		23	16
No. 29, Fort Snelling, Minn.	17		8			1
No. 30, Plattsburg Barracks, N. Y.	3		3		1,161	1,024
No. 34, East Norfolk, Mass.	333	190				
No. 41, Fox Hills, Staten Island, N. Y.		1				3
No. 43, Hampton, Va.	393		48			
Camp Bowie, Tex.	2					
Camp Custer, Mich.	13				1	
Camp Devens, Mass.	10		1		4	
Camp Dix, N. J.	33				8	
Camp Dodge, Iowa	14		3			
Camp Gordon, Ga.	2					
Camp Grant, Ill.	3		2			
Camp Lee, Va.	6					
Camp Lewis, Wash.	2		1			
Camp Meade, Md.	2		1			
Camp Pike, Ark.	2					
Fort Sam Houston, Tex.	42		24		13	
Camp Shelby, Miss.	1					1
Camp Sherman, Ohio	16				1	
Fort Sill, Okla.			1			
Camp Taylor, Ky.	8		1			1
Camp Upton, N. Y.	47		4		11	
Post hospital, Jefferson Barracks, Mo.	9				1	
St. Elizabeths Hospital, District of Columbia	61	11				
Total	2,929	1,188	412	36	1,393	1,150

A census of mental and nervous patients in military hospitals taken as of June 25, 1919, showed the following:¹⁹

General hospital	Total	Psycho- ses	Psycho- neuroses	Constitutional psychopa- thic states	Mental deficiency	Epilep- tics	Others
No. 1	270	138	44	18	21	18	31
No. 2	51	16	15	6	4	3	7
No. 4	125	95	26	2			
No. 5	5	1	3		1		
No. 6	192	136	21	5	12	3	15
No. 25	186	124	7	11	13	2	29
No. 26	143	83	21	11	3	9	16
No. 28	318	146	40	13	28	18	73
No. 30	205	3	169	9	2	5	17
No. 43	983	693	90	72	117	10	1
Fort Sam Houston	123	59	13	12	4	5	30
Letterman	116	54	9	3	28	4	18
Walter Reed	142	100	12	3	3	12	12
Total	2,859	1,648	470	165	238	89	249

Another census taken on August 12, 1919, showed the following:¹⁷

Hospital	Total	Psycho- ses	Psycho- neuroses	Epilepsy	Consti- tutional psycho- pathic states	Mental defi- ciency
Walter Reed.....	123	67	38	6	7	5
Fort Sam Houston.....	117	58	29	14	12	4
Letterman General.....	80	53	8	7	9	3
General Hospital No. 1.....	40	21	15	1	2	1
General Hospital No. 2.....	47	12	24		9	2
General Hospital No. 4.....	194	14	131	1	37	11
General Hospital No. 6.....	132	89	23	12		8
General Hospital No. 25.....	178	138	15	7	11	7
General Hospital No. 26.....	95	54	24	5	8	4
General Hospital No. 28.....	117	73	19	9	2	14
General Hospital No. 43.....	1,087	868	23	2	59	135
Total.....	2,210	1,447	349	64	156	194

NEUROSURGICAL CASES

In the winter of 1918-19 officers specially experienced in organic neurology were ordered to certain of the general hospitals receiving wounded from overseas with the recommendation to the commanding officer that they be assigned to the surgical service.²⁰ This recommendation was necessary because the organic injuries to the nervous system, although most of them had ceased to be surgical, were being treated in the surgical services. That this great mass of neurological material, approximately 5,000 cases, should have been retained under surgical control was not an altogether happy clinical arrangement from the standpoint of the division of neurology and psychiatry, but it was inevitable in view of the circumstances.

The whole question of the proper organization for the care of this class of cases was considered important. Battle injuries of the nervous system are primarily surgical, being associated not only with open wounds but also with fractures. The best clinical arrangement for this class of injuries, at the front, is in surgical hospitals which are staffed as far as possible with the neurosurgeons and neurologists. If neurosurgeons can not be supplied in sufficient numbers the cases must be treated at the front by general surgeons. With the healing of the original wound the injury changes its type in the majority of cases. There are some cases which, when they reach the hospitals in the zone of the interior, still require operation, but these cases are in the great minority. At this stage the spinal cord injuries are hardly operable, some of the brain cases require secondary operations, and perhaps 15 per cent of the peripheral nerve palsies require surgical interference. But with these exceptions, after the original wound has healed, the majority have changed their clinical status and, though primarily surgical, now actually present problems with which a medical officer who is a neurologist by experience and interest is best fitted to deal. Those who have sustained cerebral injuries have been left irritable and subject to various symptoms, which makes personality study necessary before they can be readjusted to civil life; and the cases of peripheral nerve injuries which give promise of spontaneous repair require exact neurological diagnosis and treatment.

Thus, at the close of the surgical wound period, injuries to the nervous system become, as a class, neurological cases. But a change in clinical status would have been difficult to recognize administratively. It was not done in the British medical service and it would have been impossible under the organization which obtained in our Medical Department. The original plan, as devised in the Surgeon General's Office, was that all these cases would be cared for in the United States in one or more special hospitals, under the brain section of the division of head surgery.²¹ But when these cases began to be returned in so much greater numbers than had been anticipated, it was found that the provisions for their care in the special hospitals established for the purpose at Cape May and Colonia, N. J., were inadequate both as to the number of beds and as to qualified personnel. And, in addition, it was found that civil interests demanded a wider distribution than had been provided for. These patients, like most of all the others, wanted to be somewhere near their homes. It became necessary, accordingly, to increase the hospitals designated for their special care. More than a dozen, geographically well separated, general hospitals were therefore designated for patients of this class on their arrival from overseas, the choice of the particular hospital being made with reference to nearness to the patient's home.²¹ The division of head surgery, Surgeon General's Office, having so many of its officers overseas, could not expand its personnel to meet this situation, and as there was no neurological service in the hospital organization of the Medical Department, the patients automatically fell to the division of general surgery, to which were assigned such neurologists and neurosurgeons as were available.

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- (3) Army Regulations, 1913, par. 464.
- (4) Plans on file, Finance and Supply Division, S. G. O.
- (5) Plan R₂ (neuropsychiatric ward, base hospital). On file, Finance and Supply Division, S. G. O.
- (6) Letter from Pearce Bailey (chairman of the Committee on Furnishing Hospital Units for Nervous and Mental Disorders to the United States Government), to neurologists, May 11, 1917. On file, Record Room, S. G. O.
- (7) Circular letter, Surgeon General's Office, September 5, 1917.
- (8) Based on sick and wounded reports sent to the Surgeon General, U. S. Army.
- (9) Annual Report of the Surgeon General, U. S. Army, 1919, Vol. II, 1081-83.
- (10) G. O. No. 57, W. D., April 30, 1919.
- (11) Annual Report of the Surgeon General, U. S. Army, 1919, Vol. II, 1083.
- (12) List of Hospitals Designated for Overseas Cases, Surgeon General's Office, December 9, 1918.
- (13) Annual Report of the Surgeon General, U. S. Army, 1919, Vol. II, 1082.
- (14) History of Embarkation Hospital, Newport News, Va., by Maj. W. C. Rueker, U. S. P. H. S. On file, Historical Division, S. G. O.
- (15) History of the office of the surgeon, Port of Embarkation, Hoboken, N. J. On file, Historical Division, S. G. O.
- (16) Memorandum to Dr. Pearce Bailey, from Dr. George H. Kirby (Manhattan State Hospital), July 2, 1917. Subject: Transport and transfer of insane soldiers. On file, Historical Division, S. G. O.

- (17) Letter from the Surgeon General, U. S. Army, to Hon. Edwin D. Ricketts (concerning shell-shocked and insane soldiers of the late war), August 21, 1919. On file, Record Room, S. G. O., 701.7.
- (18) Routine reports made by post surgeons to the Surgeon General, U. S. Army. On file, Record Room, S. G. O.
- (19) Based on reports made by commanding officers, showing the number of neuropsychiatric cases in the respective hospitals, by classification, as of June 25, 1919.
- (20) Correspondence. On file, Record Room, S. G. O., 210.31-1 (Neuropsychiatry assignments).
- (21) Annual Report of the Surgeon General, U. S. Army, 1919, Vol. II, 1095, 1096.

CHAPTER IV

DETECTION AND ELIMINATION OF INDIVIDUALS WITH NERVOUS OR MENTAL DISEASE

PRINCIPLES UNDERLYING NEUROPSYCHIATRIC EXAMINATIONS

One of the most important duties of the neuropsychiatrists in the military service during the war was the elimination, at the time of their preliminary examination and before they were actually enlisted or inducted into the Army, of individuals with mental or nervous disease. Many of the purely physical disabilities which were noted and waived by mustering officers, or which disqualified recruits from service, were susceptible of improvement or cure by treatment, or got well of themselves under the favorable conditions of military training. This was rarely the case for any nervous or mental disease. On the contrary, the longer the training period was prolonged, the more pronounced these conditions became; the soldier was more and more constantly reported at sick call, or was suddenly seized with a nervous or mental collapse, or got into trouble by reason of repeated, and often unnecessary, military delinquencies. The strain of actual warfare, particularly of expeditionary warfare, with the unavoidable homesickness, loneliness, and depression—to say nothing of its actual physical dangers and hardships—brought first to the breaking point those whose morale, by reason of a general instability of the nervous system, could not be maintained. While such men usually were ultimately detected and discharged, it was not until after a considerable period of training during which they received pay, maintenance, and equipment, wasted the time of those endeavoring to instruct them, interfered with the training of their brighter or better-adjusted comrades, and occupied hospital beds which often were urgently needed for others. Another unfortunate feature of the acceptance of such men for military service was that many of them, while unable to adjust themselves to the military environment, might be useful citizens if permitted to remain in their accustomed surroundings. Left on the farm or in the factory or store, where their associates were accustomed to their peculiarities, they might prove of material service to the country in time of war.

Furthermore, if men of this type became soldiers, they were almost certain in the future to present a serious economic problem to the country. Under the provisions of the selective service act, which was in force during the period of the war, all soldiers were regarded as physically and mentally sound when accepted for service. If, after a short period in the Army, a soldier was necessarily discharged by reason of mental or nervous disability, he became a beneficiary of the Bureau of War Risk Insurance (later called the United States Veterans' Bureau), and thus was entitled to governmental compensation and hospital care. Nervous and mental disorders constituted a substantial proportion of ultimate disabilities.^a Many of the former soldiers discharged by reason

^a In February, 1927, ex-service men with neuropsychiatric disabilities constituted 46.7 per cent of all patients receiving hospital treatment as beneficiaries of the United States Veterans' Bureau. (Hospital Facilities by Coordination Areas for U. S. V. B. Patients, as of Feb. 26, 1927. Issued weekly for administrative purposes by Evaluation Division, Coordination Service, United States Veterans' Bureau. Copy on file, Historical Division, S. G. O.).

of nervous or mental diseases are drawing compensation from the Federal Government, some with a rating of total permanent disability. A large proportion of these men rendered practically no service to the country, their time in the Army having been spent in base or general hospitals, or under observation for the defect which in a short period after induction or enlistment resulted in discharge.

Before we had entered the World War, the possibility of conditions was appreciated by only a small group of the civil medical profession; it was not surprising, therefore, that they were not accepted at their face value, immediately, by the regular line and medical officers of the Army, who exhibited, perhaps, less indifference and less reluctance to accepting them, in principle, than civil authorities or general medical organizations were in the habit of doing prior to the demonstrations of their practical importance furnished by the war. The introduction of novel and special examinations of so many kinds created great administrative difficulties immediately, as they interfered with established military routine, and it probably was this factor, rather than any lack of open-mindedness as to their usefulness, that was the basis of such opposition as was made to them. Division surgeons complained that specialists interfered with the prompt getting in order of their camps, which was true, and line officers were not hard to find who maintained that if the specialists did not stop eliminating the unfit, there would be no army left. Many medical officers, not distinguishing between physical and mental disorders, halted considerably before they embraced the belief that the training which transformed poor physical specimens into robust fighting men did not have the same effects upon recruits with nervous or mental disabilities. Occasionally line officers, taking things into their own hands, looked over candidates recommended for rejection, decided that, as the men looked all right to them, they probably were all right, and then waved aside the recommendation for rejection or discharge. Ultimately it was discovered, however, that nervously unfit men were a great embarrassment to the American Expeditionary Forces. On July 15, 1918, General Pershing cabled to the Chief of Staff as follows:¹

Prevalence of mental disorders in replacement troops recently received suggests urgent importance of intensive efforts in eliminating mentally unfit from organizations new draft prior to departure from the United States. Psychiatric forces and accommodations here inadequate to handle a greater proportion of mental cases than heretofore arriving, and if less time is taken to organize and train new division, elimination work should be speeded.

Upon receipt, by the Surgeon General, of this information, the matter was taken under consideration by the chief of the division of neurology and psychiatry, and the following information, based upon reports made to the Surgeon General by neuropsychiatric examiners, was submitted to the Surgeon General by the chief of the division, with his recommendations:²

1. Apropos of the attached cablegram from General Pershing, the following data are submitted: A survey of the records in this office shows that the divisions that have gone abroad have carried with them the following number of men who had been recommended for discharge as unfit for military service by the psychiatric examiners:

Division	Number of men	Division	Number of men	Division	Number of men	Division	Number of men
4th.....	48	34th.....	21	77th.....	5	85th.....	45
27th.....	21	35th.....	181	78th.....	208	86th.....	53
28th.....	93	36th.....	138	79th.....	73	87th.....	198
29th.....	166	37th.....	271	80th.....	90	88th.....	29
30th.....	152	38th.....	130	81st.....	3	89th.....	115
31st.....	52	39th.....	244	82d.....	120	90th.....	44
32d.....	32	40th.....	25	83d.....	53	92d.....	70
33d.....	44	42d.....	273	84th.....	38	Total.....	3,035

2. The men enumerated above are epileptics, dementia præcox, general paresis, tabetics, psychoneurotics, imbeciles, etc. Because of their condition, these men are totally unfit for military service, and become a burden upon the Government either immediately upon landing, or shortly afterwards. The psychiatric service abroad is equipped only to care for men who become incapacitated in line of duty. Three thousand cases thrust upon this service almost en masse will tax the resources seriously, as it is evident has been done from the cable of General Pershing.

3. Attention is called to the fact that the numbers of cases carried over by different divisions differ markedly. Three divisions (41st, 76th, 91st) carried no men who had been recommended for discharge. The 81st carried 3; the 77th, 5; the 42d, 273; the 37th, 271; the 39th, 244, etc. It is evident, therefore, that the S. C. D. boards in the different camps vary either in the importance they attach to nervous and mental disease, or in the expedition of their work. Complaints have frequently been received on the length of time necessary to discharge men who have been recommended to the boards. An inquiry recently made in a few camps shows the following variations in time:

Camp Dix, average time 5 days.

Camp Jackson, previous to July 1, average time 24 days; since July 1, 12 days.

Camp Fremont, 21 days.

Base hospital, Alexandria, La., 23 days.

4. In order to obviate the difficulties arising in the American Expeditionary Forces, as mentioned by General Pershing, it is suggested that an effort be made to expedite S. C. D. proceedings, and that the importance of excluding recruits who are nervously and mentally unfit for service be drawn to the attention of S. C. D. boards.

REASONS FOR REJECTION OR DISCHARGE

The War Work Committee of the National Committee for Mental Hygiene appointed a subcommittee to study clinical methods and standardization of examinations and reports. The subcommittee soon rendered a report to the War Work Committee, which submitted to the Surgeon General, in July, 1917, a memorandum containing various suggestions pertaining to examinations of recruits, and giving a list of diseases, symptoms, and groups of symptoms which it was thought should exclude from military service, regardless of ultimate diagnosis. On August 1, 1917, the Surgeon General issued general directions to examiners based on these suggestions.³ (See p. 66).

There was little question about clearly defined types. No commanding officer would accept, knowingly, a man who was actively hallucinating, and an epileptic fit which was verified was equivalent to discharge. More important than the patent nervous and mental diseases, for an understanding of the general philosophy of rejection by reason of nervous and mental conditions was a knowledge of the mental states of unstable individuals whose unfitness for service was not on the surface, the advisability of whose rejection frequently was questioned not only by line officers, but by medical officers.

THE PSYCHOPATHIC PERSONALITY

Viewed from the standpoint of personality, human beings of the group called psychopathic have been so from youth, and produce, under certain conditions, characteristic behavior. At the time of any single examination the symptoms they present (and even these may be put down as conclusions on the part of the overzealous examiner) may be no more definite than irritability, inability to control the passions, suspicion, resentfulness, particularly to discipline, depression, and general egocentric tendencies. These evidences, slight in themselves, gain an additional significance when associated together characteristically, or when, as they usually can be, they are shown as characteristics by which the individual has been conditioned throughout his whole life. The behavior of such persons under military conditions is inconsistent with military efficiency. They are not of the stuff of which soldiers are made—which is the real issue so far as the Army is concerned. They are persons who can not give the service required, and no system yet devised will make them adequate.

The question to be determined, then, at the examination of a recruit, before the Army assumes charge of him, is whether his make-up is such that his behavior, with practical certainty, will be inconsistent with service. These examinations undertake to recognize at the outset, before the Government assumes liability, the type of person which the Army will be forced to recognize sooner or later. The behavior aspect is more likely to be noted than the health aspect, as is shown by the fact that soldiers are so often referred directly to psychiatrists by company commanders. What the psychiatrist attempts to do is to discover immediately and directly what otherwise it might take several expensive months to find out.

The candidate may have been treated for mental disease and may be sane now; he may have had epileptic attacks but none for a long period; he may have been addicted to the use of a drug and may have discontinued the habit; or he may have none of these serious disabilities and still may have met difficult situations in the past in such an abnormal and unsatisfactory manner—not through lack of “will” but because of a fundamental disorganization of his personality—that he may be counted on to meet those of the future no more satisfactorily.

If individuals of this category are not recognized they fail the Army in some of the following ways: By having attacks of mental disease; by the development of neuroses; by reappearance or increase of epileptic attacks; by the kind of delinquency which results from a mental or temperamental inability to adjust to the restrictions of military discipline or to profit by punishment.

Perhaps the most frequent and important reaction of the psychopathic personality to the trying exactions of war, or even to life in the Army, is the neurosis—a condition difficult to conceive of dispassionately in actual practice, because the manifestations and complaints of the neurotic seem so closely akin to malingering. A neurosis is the psychopathic means of evading a difficult situation. It may be primarily mental in character (psychasthenia), or it may present symptoms closely simulating those of organic injuries or diseases (hysteria).

Overseas the neuroses developed in large numbers both in the base sections and at the front. Although the method adopted of treating the acute cases which developed during battle, in the divisional and army hospitals, greatly decreased their numbers, there were still many in whom the symptoms persisted in a disabling way until the armistice was signed, and some in whom they persisted after that. These persistent symptoms showed plainly that the persons presenting them were of a psychopathic type and might have been recognized at the time of enlistment, and by whose rejection the Army would have profited.

As it must now be conceded that there is a large class of recruits who are bound by neurotic behavior to be a burden instead of an asset to the Army, the only questions that remain are whether these individuals can be recognized beforehand, and what, if any, distinction should be made between them as to possibilities of service.

METHODS OF ELIMINATION

Owing to the absence frequently of outstanding physical defects, the detection of mental and nervous defects in individuals during the physical examination prior to entry into the Army is frequently rendered most difficult. In times of peace, when enlistment is on a voluntary basis, and the number being examined at any place each day is not large, it is possible for an experienced examiner to detect the majority of applicants of this type. Prior to our participation in the World War, however, with the Army recruited in this manner, the number of discharges each year on account of neuropsychiatric disease was never large. Following our participation in the World War and the consequent rapid mobilization of men of draft age, it became evident that skilled recruit examiners were not available in sufficient numbers. In order that qualified examiners might be available at all camps, each professional division of the Office of the Surgeon General, as noted heretofore, designated certain of the officers exempted to that division for duty at the camps as examiners in their particular specialty.

From the beginning of the mobilization the examinations were carried on at officers' training camps, cantonments, recruit depots, and recruit depot posts, and at all points where registrants or volunteers were being mustered into the service. At first two chief methods were employed: Examination of referred cases, and general surveys.

By the method of referred cases, only such cases as were referred to the neuropsychiatrist were examined. The references were made by regimental surgeons and company commanders. It soon became obvious that this method was inadequate, as by it only men with evident defects were referred, and then generally after long and unnecessary delay. Further, the officer who made special examinations of referred cases was stationed at the base hospital, and, therefore, not readily accessible. Later, upon the appointment of examining boards at each camp functioning for the examination of all men arriving at the camps, under the general direction of the camp or division surgeon, every man was examined for mental or nervous defect by an officer assigned by the division of neurology and psychiatry of the Surgeon General's Office.

The first increments of our Army were not all examined by neuropsychiatrists and a considerable number of men unfit for military service, because of

nervous or mental condition, were carried overseas. These promptly appeared in the hospitals of the American Expeditionary Forces and, later, in General Hospital No. 30, Plattsburg, the majority of them with a history of illness of from one to five years' duration previous to their entrance into the Army. To meet this situation survey boards composed of two or more neuropsychiatrists were later ordered to examine commands which had been previously accepted for service.

Under the method of surveys, the whole command passed before the special officers. On the basis of a brief conversation and observation, and examination for such physical symptoms as tremors, changed reflexes, etc., the recruit was passed, or if not satisfactory, was deferred for a thorough examination. By this method an experienced examiner could dispose of 100 to 150 cases a day with reasonable accuracy. Large boards were sometimes sent by request of generals commanding divisions, to examine the whole division in a short space of time.

Neither of these methods being coordinated properly with the physical examinations, it was difficult for special boards to operate when the camps first opened, and later it was difficult to get the recruits together, as they were occupied with their military duties. The examinations did not become adequate until they became a part of the routine entrance examination of all recruits.

But the great practical difficulty for a time was to obtain action on the recommendations for rejection or discharge. The special examining boards were composed, for the most part, of officers of little or no military training, who, consequently, were ignorant at first of the procedure to be followed to insure action on their recommendations. For example, between two and three hundred privates of the National Guard of New York, examined and found unfit by psychiatrists in New York, were nevertheless sent to Camp Sevier, S. C., with their organizations. It was only after the useless journey to South Carolina that the recommendations found their way to the disability boards, and the men were finally discharged.

Once the recommendations reached the disability board they were generally acted on favorably, although the surgeon sometimes disapproved the board's findings, and the discharging authority did not always agree with the surgeon's recommendations. But most of the cases which were retained in the service in spite of the recommendation of the psychiatrists failed to come to the attention of the disability boards for the reasons stated above, or because troops were being moved too fast to make it possible.

It was never considered desirable that disability boards be made up exclusively of psychiatrists. Composed, as they were, of general medical officers, these officers had the advantage of acquiring a familiarity with the methods and importance of the neuropsychiatric work; furthermore, discharges recommended by mixed boards could not be considered as testimonials to the overenthusiasm of specialists. In August, 1918, an order was issued abrogating provisions for separate examining boards for three of the medical specialties, including neuropsychiatry.⁴ Following this, all the camp examinations for the purpose of examining drafted men, and later for demobilization, were coordinated, and placed under the direction of the division of sanitation, Surgeon General's Office.⁵

In the beginning there were neuropsychiatric examinations of candidate officers at a few of the first series of the officers' training camps, and at many of the second series. In general, however, officers were not examined for nervous and mental conditions prior to being commissioned and, at the majority of camps, were not examined when the neuropsychiatric surveys of the soldiers already in the service were conducted. This was an outstanding defect of the neuropsychiatric service, as many officers were later discovered to have defects of this type rendering their discharge necessary.

On the whole the cooperation existing between the neuropsychiatrists and other medical officers, as well as with officers of the line, was harmonious and attended always by a joint desire to detect and eliminate the mentally or nervously unfit from the service. Attention was directed to the importance of the work being done by the neuropsychiatric officers in the following promulgations: ^{6 7}

1. The Surgeon General again invites your attention to his desire that you make every endeavor to recognize and eliminate all cases of mental disease, all mental defectives, and all cases of nervous disease. It is believed that not less than 10 per 1,000 of men now in service are unfit from one of the above mentioned conditions

2. To aid you, orders have been issued making the services of the neurologists and psychiatrists detailed to the base hospitals available for the examination of troops of the division in his specialty.

3. It is desired that you use every effort to arrange with the commanding officer for the inspection of each organization by the specialist medical officer at some time during the training period, to discover those soldiers whose general attitude and appearance suggest the need of special neurologic and psychiatric examination. Each organization will be inspected if possible, details of this inspection being left to you, but it is suggested that they may be made advantageously when organizations are gathered together for such general medical purposes as vaccination, inoculation, physical inspection of various kinds, etc. But if special formations are necessary, you will endeavor to arrange them.

4. You will recommend to the commanding officer that general written instructions be issued confidentially to the officers, to the following effect:

(a) Officers commanding companies, troops, batteries, detachments, or other organizations will note each member of their commands for the purpose of forming an opinion as to whether they show evidences suggesting mental disease or defect, or insufficient nervous stability. Organization commanders will require the same observation by their junior officers and by noncommissioned officers, who will be directed to report doubtful cases to them.

(b) Those having officers under their command should secure special examination of any officer who seems of doubtful mental integrity or nervous stability.

(c) Senior medical officers will require those under their command to be on the lookout for mental and nervous cases.

(d) Medical officers serving with regiments or other units, those holding daily "sick call," those making physical inspections of any kind, and ward surgeons will bear nervous and mental disease in mind, and refer suspicious cases for expert examination.

(e) Officers commanding places where prisoners, garrison or general, are confined, summary court officers, judge advocates, and assistant judge advocates of courts-martial, and officers who act as counsel for enlisted men, will note the mentality of all cases before them and refer all doubtful cases for proper examination.

(f) The observations herein required should be made quietly and unobtrusively so that if possible no officer or enlisted man shall know that his mental or nervous condition is under question. This is important.

5. The fact that troops are being mentally examined will be kept from becoming a matter of gossip if possible.

6. You should require the neurological examinations of all men known to be suffering from syphilis.

7. You will require the specialist medical officer to make, through you, monthly reports to this office of the special work done. Forms 89, 90, and 91 have been prepared for this purpose. The printed copies of these forms will be sent to the cantonments by the field supply depot in a few days.

Bulletin No. 4.

WAR DEPARTMENT,
Washington, February 7, 1918.

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Officers with special experience in nervous and mental diseases have been added to the Medical Department of the Army. Such officers are detailed at all base hospitals and with many divisions. Most base hospitals have also special nurses and therapeutic appliances for the care of nervous and mental diseases. The services of these officers and nurses are available, through their superior officers, for consultation in all matters pertaining to such diseases. The foregoing facts are announced for the special benefit of persons that are brought socially in contact with soldiers, as such persons are in a particularly favorable position to witness the early stages of mental disease, and by their prompt and cooperative action may render valuable assistance in preventing nervous breakdowns. Reports from abroad indicate that a large number of the soldiers who break down nervously (shell-shock) had, for several days before their final collapse, given evidence that they were fast approaching the limit of their nervous endurance. It is believed that had something been done for them during those critical days they would have readjusted themselves quickly and gone back to their duty instead of remaining nervous invalids, with little prospect of recovery before the end of the war. Nervous breakdowns often begin by sleeplessness, persistent homesickness, nervousness, depression, self-reproach, unreasonable fear, suspicion of others, feeling of resentment against others, and general complaints of ill health. These signs often show in the man's social conduct, so that he is remarked by his companions as being restless, jerky, inclined to stay by himself, bad tempered, etc.; in other words, his companions remark that some change has come over him. The man himself may realize that he is out of sorts, but often he does not realize that he is ill and so does not report at sick call; on the contrary, he often resents the idea that he needs the care and supervision of a physician. Yet a little rest, care, and medicine, such as would be provided if his case were brought to the attention of a medical officer, would in all probability suffice at this time to put the man on his feet again.

(700.7, A. G. O.)

By order of the Secretary of War:

JOHN BIDDLE,
Major General, Acting Chief of Staff.

Official:

H. P. McCain,
The Adjutant General.

Clinics and lectures were given for other medical officers, and talks, of a suitable nature, to officers of the line. The following memorandum was distributed to company commanders: ⁸

The object of this survey is to find and discharge from the Army such cases of maladjustment to Army duties or discipline as may be shown to have a mental or nervous abnormality. The following types of cases should be sought out and sent for examination by the survey board:

Cases showing unusual difficulty in learning drill, instructions, etc., not clearly dependent on unfamiliarity with the English language.

Persistent delinquents, irresponsible, morally obtuse individuals.

Eccentric, seclusive, taciturn individuals, company "butts."

Those showing marked emotional instability; i. e., too readily moved to tears, anger, or noisy elation.

Those indulging in or suspected of abnormal sexual practices.

Drug or alcohol addicts.

Those having fainting spells or other evidences of possible epilepsy.

Persistent bed wetters.

Extreme cases of stammering.

Chronic ailers showing no evidences of organic disease, hysterical or neurasthenic individuals, suspected malingerers.

Apathetic, negligent, untidy, or otherwise seemingly inferior or objectionable individuals.

Those who may be on any other grounds suspected of being mentally unfit.

It is very desirable that each case sent for examination should be accompanied by a memorandum stating in terms of observed facts or of the soldier's utterances or conduct the reason for the desired examination.

Company commanders and regimental surgeons cooperated in the neuropsychiatric surveys, as they afforded often the only way of being relieved of problems of administration and discipline arising from the demoralizing effect of the presence in their organizations of mentally unfit individuals.

All cases about to be tried by court-martial should receive a competent psychiatric examination to determine not merely their legal responsibility, but also whether the soldier is afflicted with a neuropsychiatric disorder which would ordinarily lead to his discharge on surgeon's certificate of disability. If so affected, generally he should be discharged, rather than tried, and not recommended for reenlistment. Should trial be deemed advisable, no sentence should be imposed which might aggravate his disability—such as confinement with hard labor in a case of epilepsy—but rather forfeiture of pay or dishonorable discharge.

INSTRUCTIONS TO EXAMINERS

The examinations made by the officers of the neuropsychiatric service may be divided into two general groups. The first comprised the mental and nervous examination of applicants for enlistment and of draftees reporting at camps of mobilization. This examination was completed before the men were actually in the military service and was made with the special object of excluding those who failed to reach the required standards. In the second group fell all examinations made by the neuropsychiatrists after the individuals were actually in the Army. Included here were the examinations of patients in hospitals; of men referred by medical or line officers; the neuropsychiatric surveys of troops which had come into the Army without the special neuropsychiatric examination, as has been explained previously; and the examination of all men prior to discharge from the service. This latter examination was conducted at the various camps by the camp examining boards referred to above, but the results of the neuropsychiatric examinations at this time were largely negative, as the majority of soldiers of this type had already been detected and disposed of. Examinations made at the disciplinary barracks may be considered as a third group.

While a thorough mental examination of the recruit will eliminate a large proportion of undesirables at the outset, a certain number of mental and nervous defectives will slip through. From the nature of the diseases concerned this can not be avoided, and the neuropsychiatrists must be alert at all times to detect mental or nervous disease in those who have shown unusual difficulty in learning

the drill and in following instructions, those who are persistently delinquent, who are seclusive, eccentric, taciturn, or who exhibit other marked peculiarities of behavior. Such men were carefully sought for during the war and properly disposed of when discovered.

With the exception of the purely neurological cases the defects to be identified by the neuropsychiatric officers were more in the sphere of behavior than in that of concrete physical symptoms. The diagnoses were generally made independently of physical symptoms, and sometimes recruits, at the preliminary examinations, were recommended for rejection as mentally unsuitable who had been passed by other medical officers as physically sound in other respects. The methods employed during all these special examinations were those of clinical psychiatry.

Under date of August 1, 1917, as noted heretofore, the Surgeon General issued Circular No. 22, which outlined the nervous and mental conditions for which the neuropsychiatric examiners should search, and gave the general grouping which should serve as causes for rejection. This circular was as follows:

Circular No. 22.

WAR DEPARTMENT,
OFFICE OF THE SURGEON GENERAL,
Washington, August 1, 1917.

EXAMINATIONS IN NERVOUS AND MENTAL DISEASE

1. For the safety, efficiency, and economy of the military service it is highly essential that nervous and mental disease be recognized at the earliest possible moment. Nervous and mental diseases may, and frequently do, exist in persons who are strong, active, and apparently healthy and who make no complaints of disability. Such persons are, however, more than useless as soldiers, for they can not be relied on by their commanders, break down under strain, become an encumbrance to the Army, and an expense to the Government. Disorders of this character are often demonstrable only as the result of a painstaking and special examination directed toward the mind and nervous system. This circular is published for the special purpose of calling the attention of medical officers to the particular diseases most frequently overlooked on general examination, and the symptoms most important to their diagnosis, and to certain characteristics in personality and in the behavior which might raise the question of the existence of mental disease.

2. The duties of the examiner are to be familiar with the symptoms and significance of nervous and mental disease and the means of eliciting them, and to recommend for rejection from service all those in whom any of the evidences mentioned in paragraph 4 are demonstrated. He should determine the importance of slight variations from the ordinary normal standard and recommend acceptance or rejection on the basis thereof. He should search for symptoms or tendencies which may be concealed for the purpose of obtaining service, and he should recognize symptoms which are feigned for the purpose of avoiding service. Organic nervous disease can not be feigned in a way to deceive a skillful and careful examiner. To demonstrate feigned insanity a period of several weeks' observation may be necessary.

3. It is assumed that the examiner is familiar with the current methods of examination in neurology and psychiatry, and that he will make careful employment of them in all cases referred to him for consultation. But in addition to acting as a consultant to whom cases are referred, he must also himself select cases for special examination. To this end, he is directed to be present as often as possible when the recruits are gathered together at times of instruction and training and for such general medical purposes as vaccinations, inoculations, group examinations of the heart, lungs, etc. At such times he should discriminatingly observe the appearance and behavior of the recruits, pass in and out among them, converse with them when possible, and report to the camp surgeon the names of any whom his obser-

vations have led him to consider as requiring a special neurological and psychiatric examination. By thus learning, in a way, to know the recruits personally his special training should enable him now and then to pick out one who might pass the general medical examination and yet whom special examination would clearly prove to be a hazard to the Army.

Queerness, peculiarities, and idiosyncrasies, while not inconsistent with sanity, may be the beginnings or surface markings of mental disease. A soldier is too important a unit for such variations from a standard of absolute normality not to be looked into before the recruit who presents them is accepted for service. To aid the neurologist and psychiatrist in these ways the camp surgeon shall direct all medical officers, dental surgeons, instructors, hospital sergeants, and others who come in close contact with recruits to refer to him (the camp surgeon) all recruits who persistently show any of the following characteristics: Irritability, seclusiveness, sulkiness, depression, shyness, timidity, overboisterousness, suspicion, sleeplessness, dullness, stupidity, personal uncleanness, resentfulness to discipline, inability to be disciplined, sleepwalking, nocturnal incontinence of urine, and any of the various characteristics which gain for him who displays them the name of "boob," "crank," "goat," "queer stick," and the like.

The reaction of the pupils to light should be part of every medical examination, and if this is not systematically provided for, the neurologist and psychiatrist should be directed to determine it. This could be done at the time of group inoculations and with the help of a hospital sergeant could be made rapidly. Electric light should be used. It is especially important in the examination of officers and recruits above 25 years of age.

It is further recommended to camp surgeons to provide neurological examinations for all cases of syphilis.

4. The following are causes of rejection for military service:

- A. Organic nervous diseases.
- B. Mental defect.
- C. Mental disease and pathological mental states.
- D. Confirmed inebriety (alcohol or drugs).

A. ORGANIC NERVOUS DISEASE

Certain after effects of organic nervous disease need not be causes for rejection provided (1) that the disease is no longer operative and is not likely to recur, (2) that the effect left by it does not prevent a satisfactory fulfillment of military duties. Examples of such conditions are paralysis of a few unimportant muscles following poliomyelitis, slight unilateral hypertonicity as a result of an infantile hemiplegia in a man now robust, and various traumatic conditions. A history of hemiplegia occurring after infancy should always exclude, even if no symptoms remain.

Existent organic nervous disease should always exclude. For example, neuritis, of one or many nerves, while susceptible of recovery without resultant defect, is none the less a cause for rejection as long as it exists. The following organic nervous diseases are mentioned specifically, as they are the ones which frequently present few symptoms and may pass undetected by even the most skillful examiner:

Tabs, or locomotor ataxia.—Look for Argyll-Robertson pupil or pupils, absent knee jerks, Romberg symptom, ataxia of hands or legs (especially with closed eyes), hypotonia, anesthetic areas of skin. History is usually that of slow progression, failing sexual power, and pains in the legs or back, often described as rheumatism. In doubtful cases it is required that the Wassermann reaction of the blood be determined and the cerebrospinal fluid be examined as to the Wassermann reaction, cellular and globulin content, etc.

Multiple sclerosis.—Look for intention tremor, nystagmus, absent abdominal reflexes, and increased tendon reflexes. The scanning speech may be mistaken for stammering. No history of pain, but sometimes history of urinary disturbance.

Progressive muscular atrophies, dystrophies, and syringomyelia.—Look for atrophies in the small muscles of hand and in the muscles of the shoulder girdle, with fibrillary twitchings. These plus anesthesia for heat and cold (sears on hands from cuts and burnings) = syringomyelia. History usually furnishes little data, although reference may be made to awkwardness. No history of pain. Syphilitic spinal disease imitates these conditions closely.

Epilepsy.—Look for deep scars on tongue, face, and head. The voice is frequently characteristic. If history alone, verify by correspondence with physicians.

Hyperthyroidism.—A nervous disease in its effects. Look for persistent tachycardia, exophthalmos, tremor, enlarged thyroid. History of general nervousness.

In addition to the foregoing there are certain sets or combinations of symptoms which should exclude from service. They may not by themselves be sufficient for an exact diagnosis, but they prove beyond cavil that the nervous system is seriously diseased and totally undependable for any continuous service.

Pupil or pupils.—Argyll-Robertson.

Nystagmus (in one not an albino), absent abdominal reflexes, intention tremor.

Combination of any two should constitute a cause for rejection.

Babinski reflex.

Disturbances of station or gait.

Disorders of speech on test phrases (viz, "Third riding artillery brigade") plus facial tremor or any other one symptom of organic disease. Confirmation by laboratory findings is desirable.

Cervical sympathetic syndrome, viz, unilateral narrowing of palpebral fissure, sunken eyeball, flattening of face, unequal pupils.

B. MENTAL DEFECT OR DEFICIENCY

Look for defect in general information with reference to native environment, ability to learn, to reason, to calculate, to plan, to construct, to compare weights, sizes, etc.; defect in judgment, foresight, language, output of effort; suggestibility, untidiness, lack of personal cleanliness, anatomical stigmata of degeneration, muscular awkwardness. Consult psychometric findings. Get history of school and vocational career and disciplinary report.

C. MENTAL DISEASES

A definite corroborated history of a mental disease that required hospital treatment or observation serves as a cause for rejection in a recruit mentally normal at the time of examination. The circumstances should, however, be inquired into with great care. Few mental diseases present objective physical signs, but their manifestations are none the less characteristic and dependable. All mental diseases are causes for rejection. In addition to the well-defined clinical types such as paresis, dementia præcox, etc., there are various combinations of psychological symptoms which render those who suffer from them unstable, unreliable in emergency, and subject to attacks of disabling mental illness from slight emotional causes.

General paralysis (paresis).—Look for Argyll-Robertson pupil or pupils, facial tremor, speech defect in test phrases, and in the slurring and distortion of words in conversation, writing defects consisting of omissions and distortion of words. Mood is apathetic or depressed or euphoric. Memory loss, discrepancies in relating facts of life. Knee jerks may be plus, minus, or normal. In doubtful cases it is required that the Wassermann reaction in the blood be determined and that the cerebrospinal fluid be examined as to Wassermann reaction, cellular and globulin content, etc.

Dementia præcox.—Look for indifference, apathy, withdrawal from environment, ideas of reference and persecution, feelings of the mind being tampered with, and thoughts being controlled by hypnotic, spiritualistic, or other mysterious agencies, hallucinations of hearing, bodily hallucinations, frequently of electrical or sexual character; meaningless smiles; in general, inappropriate emotional reaction and a lack of connectedness in conversation. There may be sudden emotional or motor outbursts. Get history of family life and of school, vocational, and personal career.

Manic-depressive insanity.—Look for mild depression with or without feeling of inadequacy or mild manic states with exhilaration, talkativeness, and overactivity.

Psychoneuroses.—Look for hysterical stigmata, such as cutaneous anesthetics (especially hemianesthesia), contractions of the visual fields, etc., phobias, morbid doubts and fears, anxiety attacks, compulsions, hypochondriasis. Compare complaints with behavior and obtain history as to former nervous breakdowns and vocational career.

Psychopathic characters.—Homosexuals, grotesque liars, vagabonds. Superficially bright oftentimes. These individuals do not last out and never stay at any one thing long. Frequent military and civil offenders. Get history of personal career.

D. CHRONIC INEBRIETY

For alcoholism look for suffused eyes, prominent superficial blood vessels of nose and cheek, flabby, bloated face, red or pale purplish discoloration of mucous membrane of pharynx, and soft palate; muscular tremor in the protruded tongue and extended fingers, tremulous handwriting, emotionalism, prevarication, suspicion, auditory or visual hallucinations, persecutory ideas.

For drug addiction look for pallor and dryness of skin. If taking drug, the attitude is that of flippancy and of mild exhilaration; if without it, it is cowardly and cringing. There are also, during period of withdrawal, restlessness, anxiety, and complaints of weakness, nausea, and pains in stomach, back, and legs. Distortion of *alæ nasi*. Pupils contracted by morphine and dilated by cocaine. All habitual drug takers are liars. They do not drink, as a rule, and are inactive sexually.^b Most drug takers use needles and show white scars on thighs, arms, and trunk. Heroin takers are mostly young men from the cities, often gangsters. They have a characteristic vocabulary and will talk much more freely about their habit if the examiner in his inquiries uses such words as "deck," "quill," "package," "an eighth," "blowers," "cokie," etc.

W. C. GORGAS,

Surgeon General, United States Army.

Approved by order of the Secretary of War, August 9, 1917. (702 O. D., A. G. O.)

STANDARDS OF FITNESS *

Circular No. 22, although it set few absolute standards, largely determined the findings of the neuropsychiatric officers throughout the war. In pronounced cases of definite diseases, such as dementia præcox and epilepsy, it was possible to follow a fixed standard, but many of the mentally and nervously unfit are border-line cases or are types of inadequate personality impossible of absolute classification. The actual symptoms are not always definite, and the reasons for rejection for military service must frequently lie in the judgment of the examiner and his ability to evaluate in terms of personality development or psychopathology the social histories of the men. For example, many of the men rejected on account of constitutional psychopathic state would have been accepted had it not been for the special examination by the neuropsychiatrists, as no definite tangible physical symptoms existed which, otherwise, would have been observed. Had these men been accepted for military service the majority of them would have been ultimately discharged as inapt under the provisions of paragraph 148½, Army Regulations, or for physical disability, or by sentence of a court-martial, after having been convicted for some dereliction of duty.

In the consideration of mental deficiency, the standard for rejection was not always uniform, although generally understood to be a mentality of or below that of a child of 8 years. It is apparent from reports received in the Office of the Surgeon General that this 8-year standard is too low.

^b This was proved to be in error.

^c A full discussion of physical examinations may be found in Vol. VI, Sanitation, Chaps. XIX, XX, and XXI.

However, it was not always possible to arrive at a scientific determination of the mental age of recruits, as the time required for the necessary examination was often not available. Even if the psychological group tests had been applied for all recruits, the problem would not have been settled, as it was not agreed that psychological rating alone is sufficient to warrant rejection for mental deficiency.

Throughout the entire group of neuropsychiatric disorders much latitude was necessarily left to the opinions of the neuropsychiatric examiners, and the recommendations of these officers with reference to the mental or nervous fitness of recruits for the military service came eventually to be quite generally followed. This was true for both rejection from and retention in service. Chronic alcoholism, for instance, was a cause of rejection, yet comparatively few alcoholics were rejected, far less than might have been under the existing standards. The standards of physical requirements placed subjects of drug addiction in the deferred irremediable group, yet a certain percentage of them were accepted for service.

During the first period of mobilization the acceptance for limited service of recruits, presenting certain specified neuropsychiatric defects, was authorized and recommendation to this effect was made in a considerable number of cases. With added experience the disadvantages of such a procedure became evident, as has been mentioned, and upon the recommendation of the Surgeon General, recruits presenting neuropsychiatric defects, with a few minor exceptions, were rejected for all military service. The most important of the exceptions mentioned was that certain mental defectives, especially negroes, be accepted for limited service in labor battalions. Reports regarding the service of men of this class left considerable doubt as to the wisdom of this policy.

The subject of aviation opened up a new and important field of neuropsychiatric activity, for it was found that even after the minute and prolonged examinations to which aviators were subjected, there was still room for special investigation of the nervous system. Three neuropsychiatric officers were detailed to the medical research laboratory at Mineola, Long Island, to study the problems peculiar to this branch of special work.

Because of the high physical and mental standards of fitness employed in the selection of men for this arm of the service, the neuropsychiatric problem here was different from that associated with the ordinary work of elimination for mental and nervous disease or defect carried on in the other branches of the service. The psychiatric work at Mineola was more than the mere search for pathological conditions through the observation of more or less gross signs or symptoms, or even the more extended examination of men suspected of mental or nervous disease. Because of the superior type of human material needed for the Air Service and the special stresses and strains of aerial warfare, this work took on the character of refined personality studies in which the more difficult and less tangible emotional factors had to be considered and dealt with.

Such personality studies were made after the examination of several hundred aviators and after numerous conferences with American officers who had seen service at the front, and with representatives of our allies. The

psychiatrist had three definite objects in view in making these studies: (1) To detect the presence of nervous and mental diseases which would render the aviator temporarily or permanently unfit for service; (2) to form a definite idea as to what extent the aviator could stand the pressure of life at the front; (3) to determine, and as far as possible to compensate for, the existence of any latent tendencies which, under the strain of actual warfare, would become so accentuated as to make the aviator either inefficient, or to increase his danger of nervous and mental collapse.

The value of these brief studies in reducing the number of casualties due to preventable causes and in increasing efficiency, it is believed, was clearly demonstrated. It was felt that the information obtained had a direct practical bearing in assisting the aviator to maintain his morale and to make a rational effort to direct all of his nerve and brain power, without useless dissipation, to the task of winning the war. The following cases are examples of the advantages accruing from a psychiatric service for aviators:⁹

Case 1.—A typical case of mild manic excitement, marked by motor restlessness, slight but well marked irritability, typical elation and desire to talk, was examined one forenoon and pronounced unsafe for flying. This aviator, although forbidden to fly, disobeyed orders, took the plane up, and crashed on attempting to land. The machine was partially wrecked, and by a miracle neither the observer nor the pilot was seriously injured.

Case 2.—One of the best pilots, who had had 300 hours in flying, lost nerve and when ordered to fly refused to go, saying he was sure an accident would follow. This aviator was referred to the neuropsychiatric department for examination, and it was discovered that his sudden loss of nerve was due to an unsolved personal problem which he had attempted to dodge and to forget. After one week's treatment in which assistance was given in settling the difficult situation, his nerve returned and he was practically as efficient as ever.

In a number of cases studied the symptoms of mental staleness and mental fatigue were present. These symptoms were characterized by loss of interest in work, a tendency to analyze details and forget the main object in view, and a certain recklessness, the result of defective inhibition. Serious accidents would have followed had these aviators been allowed to fly before they had gained their emotional equilibrium. Many serious accidents occurred as the result of the failure to recognize the importance of the initial symptoms of fatigue and staleness.

NEUROPSYCHIATRIC EXAMINATIONS IN CAMPS

The following discussion of neuropsychiatric examinations made in camps is based on the reports to which they are credited, without comment as to the findings:

IN RECRUITING AND CANTONMENT⁴

The neuropsychiatric work in the cantonment presented special features which were quite different from those in military hospitals. In the latter, neuropsychiatry was similar to that in civil hospitals, or civil practice. In base hospitals one found chiefly obvious disorders, which had been referred for examination and treatment, by the regimental surgeons, who as a rule were not very familiar with such conditions. In the cantonment, cases of the same class

⁴ Neuropsychiatry in Recruiting and Cantonment, by Maj. M. S. Gregory, M. C. *Archives of Neurology and Psychiatry*, 1919, 1, No. 1, 89.

were met with, but, in addition, one encountered a special type, which rarely, if ever, found its way to the base hospital, by reason of the fact that the true character of such disorders was not recognized and very frequently they were regarded as entirely foreign conditions, such as malingering, carelessness, shiftlessness, delinquency, and inattention to duty.

TYPES OF DISEASES OBSERVED

These cases were not dissimilar to those found in civil life, only modified by the natural differences, such as age, sex, climate, geographical conditions, care in selection, etc. One encountered gross organic nervous diseases, such as early tabes, paresis, multiple sclerosis, peripheral neuritis, neurosyphilis, residual from old poliomyelitis, occasional brain tumor, and other conditions, on the one hand, and, on the other, well-developed dementia præcox, manic-depressive psychoses, mental deficiency, alcoholism, drug addiction, epilepsy, and well-marked psychoneuroses.

Between these two extremes, there was a host of intermediary conditions, such as mild neuroses and psychoneuroses, neurasthenias, anxiety states, hysterias and hysteroid episodes, epileptoid conditions, psychopathic personalities, inferiors, military misfits, and otherwise near-normal individuals. Cases of this group were, of course, the most baffling and taxed the ingenuity and resourcefulness of the examiner to the utmost. Moreover, they constituted a greater menace to the military organization, by lowering the efficiency and impairing the general morale, than did the obviously diseased types which were readily recognized and without great difficulty eliminated. They were constant sources of annoyance and trouble to the officers, forming the larger number of the absentees, the discontented, the inefficients, the inmates of the guardhouse, and the frequenters of the regimental infirmary. These were the cases which complained of being dizzy, faint, and bewildered at critical moments, while in training or maneuvers.

The psychoneurotic formed the largest and most important of this intermediary group. As they presented themselves in the cantonment, and based on the duration and mode of onset of their malady, they were classified, for practical purposes, into three groups:

The first group consisted of those in whom the disease existed long before their entrance into the Army. These, as a rule, had neuropathic family histories and had been unstable and more or less shiftless, long prior to the onset of the neuroses. Curiously enough, many of the neurotics of this type were found among the enlisted men who had been advised, by physicians, to enter the Army with the assurance that the discipline and outdoor life would correct their trouble. Others had enlisted without much advice, although they themselves had entertained the hope that they would derive benefit from military service. According to their own statements, all seemed to have felt quite improved for a short period immediately after their enlistment. However, this amelioration was of brief duration. Our experience was that this type of neurotic was quite unfit for military service and that the entrance of such individuals was detrimental to themselves as well as to the Army.

The second group comprised those in whom the disease arose while they were in the Army, following an accident, injury, or some somatic disorder, such as rheumatism, bronchitis, etc. The neurosis was referred to and intimately connected with the injury or disease. These men, as a rule, had a better family and personal history than the former group and recovery of a small proportion might be looked for in camp.

The third group was made up of men whose antecedents had been apparently free from neurotic taint and in whom the hysterical conversion had not been definitely established, remaining latent or just beneath the surface and usually corrigible by educative and environmental influences.

METHOD OF APPROACH

One hardly expected to be received with enthusiasm when one arrived at a camp to do neuropsychiatric work. There appeared to be, on the contrary, with very few exceptions, a lack of interest or an indifference or a manifest skepticism; not infrequently there was a passive, or even an active, antagonism to any examination of this sort. Strangely enough, the medical officers were the chief passive obstacles and, in the very beginning, very little assistance or cooperation could be obtained from them. So the first effort at a cantonment had to be directed to the officers, especially the medical officers, with the view of demonstrating to them the practical value of such examination in order to enlist their sympathy and cooperation. They had to be made to appreciate the importance of neuropsychiatric examinations. In order to accomplish this, one frequently had to resort to tact, persuasion, or even strategy.

In dealing with this situation of passive resistance, it was desirable in the beginning to report as unfit for military service only men with obvious nervous or mental disturbances in whom one could show the disorder in its early phases and point out how the disease influenced the soldiers' conduct and efficiency. For example, the painstaking demonstration of early cases of tabes, of disseminated sclerosis, of paresis, of dementia præcox, or of manic-depressive psychosis, which had been unrecognized and unsuspected, went a great way in rousing the interest and even the enthusiasm of the medical officers. The greatest help to the neuropsychiatrist came, however, from the line officer, and particularly the company commander. It may seem strange, but it is nevertheless true, that the line officers appreciated the value of neuropsychiatric examinations much more readily than did the medical officers.

The explanation for this was found in the fact that the line officer rated his men in terms of conduct, behavior, and efficiency, which, after all, was equivalent to the standard of the neuropsychiatrist, who estimated conduct from the mental qualities and make-up of the individual. If a company of soldiers be carefully examined from the neuropsychiatric standpoint and the results compared with the reports furnished by the company commander of men in his organization who have been inapt, inefficient, slow, awkward, easily fatigued, delinquent, insubordinate, and difficult to get along with, a striking parallelism will be found between the two sets of observations.

Experiences of this character naturally brought the line officer very close to the neuropsychiatrist. The officer eagerly sought counsel and aid, as he at

once recognized that he and the examiner were dealing with similar problems. The neuropsychiatrist might be called on by the commanding officer to give advice in the matter of discipline of the force and even in the rating of the efficiency of his officers.

In a hastily formed army like ours, especially under a system of draft, there was a great demand on the individual soldier for a rapid and violent adjustment. Men without any previous military experience, drawn from every walk of life—from distant parts of the country, from farm and factory, bank and bench, the rich and the poor, the illiterate and the educated—all were thrown together in a heterogeneous mixture and subjected to the same discipline, the same regulations, and the same daily routine.

It was most astonishing how well and how rapidly they adapted themselves under these most difficult conditions. However, there was a small number in whom this adjustment did not readily take place. It was among this class of men that one observed pathologic reactions in the form of sluggishness, discontent, inadaptability, lonesomeness, nostalgia, lack of application, lack of initiative and ambition and, therefore, military inefficiency. Some of these, of course, were of markedly pathologic make-up, but the great majority were men to whom the neuropsychiatrist could be of the greatest assistance. These were the border-line cases, the potential neurotics and psychotics, in whom preventive psychiatry found a most fertile field.

Many patients of this kind, although able to get along fairly well in camp, suffered a definite breakdown at some critical time, such as just before embarkation; others were returned from overseas before they had seen any active service at the front.

SUGGESTIONS AS TO PROPER SUPERVISION

It was surprising how much the advice, encouragement, assurances, personal contact and attention, and trivial changes in environment would do for these men. That this was not mere theory, but intensely practical, could be readily demonstrated in a military camp or cantonment. The following are a few brief illustrations:

The attention of the neuropsychiatrist was called to a soldier who was indifferent, inefficient, lazy, and seemingly lacking in initiative. Examination revealed that he came from a large city, had had a high-school education, had worked as a salesman, and had a salary of from \$75 to \$100 a week. He was made assistant in the camp to a kitchen worker, who was illiterate, far below him socially, and whose earning capacity had never been more than \$12 a week. The soldier did not complain of this, nor could he give any conscious reason for the change in his efficiency and conduct, which, however, he acknowledged. His commanding officer was advised to place him in another department where his talents would find a better expression. Within a week a striking change had come over his disposition and he was regarded as a most useful, energetic worker and a promising soldier.

A soldier serving as a waiter at an officers' mess showed mild mental depression. He was regarded as slow, inattentive, and inefficient. He complained of insomnia, nervousness, headache, dizziness, and inability to take any interest

in things. He was unable to assign any cause for his disability. He was anxious to be a soldier and serve his country. It was further found that he was a recent graduate of a New England college; had been brought up in affluence and comfort, and was socially equal or superior to many whom he attended as a waiter. He consciously did not resent his position, because he felt that it was a part of military life. The commanding officer, on recommendation, assigned him to another kind of work more in keeping with his talents and experience. He soon became active, energetic, and efficient. He was regarded as good material for a soldier and was rapidly promoted. These actual cases were selected from a large number of records.

RESULTS THAT MIGHT BE EXPECTED

There were many soldiers who voluntarily sought the advice of the neuropsychiatrist because of nervousness, dizziness, inability to sleep, poor appetite, indefinite pains, etc., and who, with marvelous rapidity, yielded to treatment by the "nerve specialist" of the camp. The amount of effective effort which could be achieved in applied neuropsychiatry in the Army was limited only by the experience, interest, and ability of the neuropsychiatrist. The neuropsychiatrist was no longer one who merely selected obvious cases of nervous and mental disease for elimination from the Army, but was one who also healed, repaired, conserved, and reconstructed. He became the guardian of the mental health, just as the sanitary surgeon was responsible for the physical welfare of the military organization.

AT CAMP PIKE, ARK.*

To the neuropsychiatrists fell the work of eliminating the nervous and mentally unfit among the recruits. This examination was made in connection with and as a part of the regular physical examination. While it is true that in some instances the attempt was made to unduly rush the work, and as a result a few men slipped through who should have been rejected, yet, taken in the aggregate, this number was very small and these few cases were generally detected later, since the troops had to undergo another neuropsychiatric test before being accepted for overseas duty.

The average neuropsychiatric board consisted of five or six members and, as a rule, worked in two sections. In the course of the regular routine examination the recruit came before the first section of the board where he was given a short neurological and psychiatric examination, and if there was a suspicion of any abnormality he was referred to the second section, where he was subjected to a very careful examination and either accepted or finally rejected. If there was still doubt regarding his case he was sent to the psychopathic ward of the base hospital, where he was closely observed and all necessary tests made to determine his true nervous and mental status.

When the draft first began in the fall of 1917 the instructions to the local boards were not very clear and explicit and were sometimes difficult to properly interpret; as a result, a number of recruits were found unfit for service when

* Work of the Neuropsychiatrists in the United States Army Camps, by Capt. Hermon S. Major, M. C. *Journal of the Missouri State Medical Association*, 1919, xvi, No. 11, 377.

they were examined by the special boards at the camp and consequently were returned to their local boards. As time went on the local board became more critical and did quite a good deal of eliminating at home. As an illustration of this, the following results of some neuropsychiatric examinations, taken from the report of the neuropsychiatric board at Camp Pike, Ark., are given: May 7 to May 26, 1918, number examined, 9,834; number rejected, 199, or 2.02 per cent. May 26 to June 20, number examined, 10,338; number rejected, 165, or 1.59 per cent. June 21 to July 16, number examined, 19,178; number rejected, 190, or 0.99 per cent. July 16 to August 23, number examined, 22,020; number rejected, 173, or 0.79 per cent. August 23 to September 21, number examined, 22,649; number rejected, 123, or 0.54 per cent.

The steady decrease in the number of rejections at this one camp would tend to prove that either the local boards were more carefully eliminating the nervous and mentally unfit or that the neuropsychiatric board was more lax in its examinations, but since practically the same board worked at Camp Pike during this time and under the same instructions, this hardly seems plausible, especially in view of the fact that the same conditions obtained with the other special boards at this camp during the above-mentioned time.

AT CAMP DEVENS, MASS.^f

The following is a brief summary of the neuropsychiatric examination of 170,478 soldiers at Camp Devens, Mass. There were rejected for all neuropsychiatric causes 1,787 men. These examinations were conducted from early in September, 1917, until November 11, 1918. The classification of diseases used is the one furnished by the division of neuropsychiatry of the Surgeon General's Office.

The first subdivision is that of nervous disease or injury. Under this heading were rejected 389 men. As the accompanying table shows, the majority of these rejections were for epilepsy. The diagnosis of epilepsy is by no means so hard as some imagine, if the patient, on physical examination, presents the characteristic mental symptoms and in addition has scars on various parts of the body and head caused by injuries while in convulsions, or if the tip and sides of the tongue are scarred; the symptoms were considered sufficient for rejection. If the patient stated that he had epilepsy and could show none of these signs, he was observed in the neuropsychiatric wards of the base hospital. The orderlies there were trained in the observation of convulsive attacks, particularly in disturbances of the tendon reflexes, and whether or not the pupils reacted to light during and after the attacks. In our experience the reaction of the pupils to light is the very best single test in the differentiation between epilepsy and hysteria. So far as we know, the pupillary reflex to light is always absent in an epileptic attack and never is in an hysterical attack. The other subheadings under nervous disease and injury will readily explain themselves. The small number of cases of syphilis of the nervous system is no doubt explained by the ages of the men examined. They were rather too young to show tabes

^f Report of Neuropsychiatric Work at Camp Devens, Mass., by Lieut. Col. L. Vernon Briggs, M. C., and Maj. Morgan B. Hodskins, M. C., *New York Medical Journal*, 1921, cxlii, No. 14, 749.

dorsalis, and no doubt most of the frank cerebrospinal cases were rejected by the local draft boards.

Under the heading psychoneurosis, 249 were rejected. The cases of stammering were rejected at time of examination. The others were always observed for some time, either in their organization or in the base hospital, before they were rejected.

There was a total of 167 rejections under the heading psychosis. Some of these cases were rejected immediately, as they came to camp with a frank psychosis. In others, psychosis developed after the patient had been under military training for some time. A psychotic individual does very poorly in the Army. As soon as he is subjected to military discipline he usually breaks down.

Under the heading inebriety there were 57 rejections. These rejections were made after the patients had been under observation for a few days and showed the well-known withdrawal symptoms. The patient listed as a case of drug addiction, opium, was addicted to the use of camphorated tincture of opium. His statement was to the effect that he would take more than a pint of this a day, and he showed well-marked withdrawal symptoms. Forty-five cases were rejected for chronic alcoholism.

Under the heading mental deficiency, as one would expect, there was a large number rejected, a total of 813. These men were nearly all returned to their homes.

Under the heading of constitutional psychopathic state there were 68 rejections. These men were rejected only after they had been observed in their companies for some time, and had proved themselves so totally unfit for military service that it was necessary to reject them.

NERVOUS DISEASE OR INJURY		NERVOUS DISEASE OR INJURY—continued	
Epilepsy.....	261	Facial tic.....	1
Cerebrospinal syphilis.....	11	Nystagmus.....	1
Congenital syphilis with nervous symptoms.....	1	Hyperthyroidism.....	1
Hemiplegia.....	7	Brachial neuritis.....	1
Paraplegia.....	6	Destructive lesion of red nucleus....	1
Tertiary syphilis with nervous symptoms.....	30	Total.....	389
Multiple sclerosis.....	9		
Multiple neuritis.....	10	PSYCHONEUROSIS	
Paralysis, facial.....	4	Hysteria.....	133
Enuresis.....	8	Neurasthenia.....	64
Poliomyelitis, chronic.....	3	Psychasthenia.....	12
Sciatic neuritis.....	3	Stammering.....	40
Chorea.....	13	Total.....	249
Migraine.....	1		
Myotonia congenita.....	2	PSYCHOSIS	
Spinal meningitis, chronic.....	1	Dementia præcox:	
Congenital speech defect.....	1	Hebephrenic.....	79
Hereditary tremor.....	2	Paranoid.....	31
Transverse myelitis.....	1	Katatonic.....	11
Tabes dorsalis.....	9	Simple.....	7
Hereditary ataxia.....	1		

PSYCHOSIS—continued		MENTAL DEFICIENCY	
Psychosis:		Imbecile.....	258
Manic-depressive.....	25	Moron.....	555
Traumatic.....	1		
Epileptic.....	1	Total.....	813
Alcoholic—			
Acute hallucinosis.....	4		
Chronic paranoid.....	1		
General paralysis of the insane.....	6		
Psychosis, toxic.....	1		
Total.....	167		
INEBRIETY		CONSTITUTIONAL PSYCHOPATHIC STATE	
Drug addiction:		Inadequate personality.....	48
Morphine.....	48	Paranoid personality.....	11
Heroin.....	4	Emotional instability.....	4
Cocaine.....	4	Pathological liar.....	1
Opium.....	1	Sexual psychopathy.....	4
Alcoholism, chronic.....	45	Criminalism.....	1
Total.....	102	Total.....	69
		Total rejections.....	1,787

AT CAMP SHERMAN, OHIO *

This war brought about many innovations, and among them was a consideration of the individuality and of the mental and nervous condition of the prospective soldier. But the line officer did not always appreciate this or know what things to be on the lookout for in order to detect the indications of such abnormal conditions in the men as might be detrimental to the service. So a part of the work of the psychiatrist was to give talks to the line officers, telling them how the various mental and nervous conditions which interfere with the making or the dependability, or the endurance or the efficiency of the soldier, and what types of behavior he should be on the lookout for. Their cooperation in looking for these conditions and sending men for examination or observation was asked for. Some were very much interested and cooperated; others thought it all nonsense; others were indifferent. Such talks had to be arranged for with the regimental commanders. If one wished to talk to the medical officers only, the arrangements were made with the division surgeon. But it was advisable to talk to the nonmedical officers as well, and even to the noncommissioned officers, for they saw much more of the men than the medical officers did.

An important work of the psychiatrist was to make a survey of the whole personnel of the camp. The ideal way to do this would have been to have the recruits on arrival at camp come into special barracks where they could be held before being assigned to any organizations until the various special examiners could go over them at reasonable leisure. An approximation to this plan was made by having the recruits very hastily surveyed by the examiners as fast as they came in. The men were stripped and examined by the various specialists. The examinations had to be very superficial when over 1,500

* The work of Psychiatrists in Military Camps, by Maj. E. Stanley Abbot, M. C., *American Journal of Insanity*, 1919, lxxv, No. 4, 457.

men were looked over in a day. Many slipped through with defects which were detected some time later who would have been eliminated in the first place if only half the number were examined in the same period of time. Four neuropsychiatrists were able to make a superficial examination as fast as the other examiners made theirs.

Before even this plan was adopted, and wherever it had not been put into practice, a survey of the personnel, regiment by regiment, was made when possible. It was necessary to secure the cooperation of the commanding officer of the regiment for this. It was sometimes easily secured; sometimes he resented it as an interference with his work of training soldiers because it took the men away from their work. Whenever possible it was advisable to make the survey in cooperation with the tuberculosis or other examiners, for example, as it caused much less loss of the soldier's time. After the commanding officer had given his cooperation, arrangements were made with the regimental surgeon and the adjutant to have the men of a given company remain in barracks or report at the regimental infirmary at a given time. There the psychiatric examiners went over each man, testing pupillary and tendon reflexes, coordination and station, looking for tremors and for scars suggestive of epilepsy, and asking a few questions as to heredity, environment, schooling, convulsions, or nervous breakdowns, meanwhile noticing any peculiarities. Under the most favorable conditions, with a roster of the company and a clerk to check off the names and put down findings, one examiner could make a fairly thorough preliminary survey of from 150 to 200 men a day, according to their quality. But in actual practice that number could not be examined on an average, because of time lost in going from one organization to another, changes in daily orders in the organization, misunderstandings, etc. It was found at Camp Sherman that making allowances for Sundays, holidays, and unexpected interruption, interferences, and delays, one examiner could be counted on to go over about 2,800 to 3,000 men a month. The time available and the size of the command determined the number of examiners needed to complete a survey in a given time.

This type of survey was unsatisfactory, for it can never be complete. Men were transferred out from a company that had been examined and men from unexamined units were often put in to fill up the organization, and it was difficult for the examiners to go back and pick up these men.

Since the vast majority of the men who were found to have some nervous or mental disease or defect were incapable of making good soldiers, or of enduring without breaking down the stresses of warfare, they had to be discharged. It was part of the work of the psychiatrist to make the recommendations for discharge, giving the diagnosis, and stating how the condition interfered with the man's performing general military service. In some camps the psychiatrist made his recommendation to a general military service of which he might or could not be a member. At Camp Sherman three of the psychiatrists themselves constituted a disability board. This gave an opportunity to hold conferences over the cases, to which the other neuropsychiatric examiners and sometimes other physicians were invited.

Some of the kinds of cases and of difficulties that confronted the psychiatrist can be illustrated by the experience at Camp Sherman:

The feeble-minded made up the largest single group of cases. Up to May 1, 1918, 134 out of 468 cases recommended for discharge were of this group.

Those measuring 12 years old and over were regarded as suitable material for the Army unless they were of unstable make-up, had shown economic or social inadaptabilities, or had some general physical disability, even though the latter were not sufficient in itself to be a cause for rejection.

At Camp Sherman the epileptics formed the next largest single diagnostic group. If the epileptics and organic nervous diseases were grouped together, this whole group was a trifle larger than that of the feeble-minded. Most of the patients could give a characteristic description of the onset of attacks, but in two there seemed to be absolute amnesia for them, and for having had them. One had a typical grand mal seizure, seen and described by a young physician; the other made a suicidal attempt in barracks and later in the hospital; no recollection whatever of either attempt could be elicited either by ordinary questioning or when hypnotism was attempted. No other cause for the suicidal attempt could be unearthed than a probable epileptic crepuscular condition.

Among the officers referred for examination, manic-depressive depressions predominated, and these were the most frequent of the actual psychoses seen at Camp Sherman.

There were many cases of neurasthenia following trauma or severe illness, and it was often a difficult matter to determine whether it was a real or an assumed disability. These cases were usually kept under observation several weeks, and information was sought from physicians who had attended them in civil life. Consultation with the orthopedists or other specialists was frequently held. X-ray examinations were usually negative, as were the results of spinal puncture and Wassermann tests. There were other types of neurasthenia, some with a number of vagotonic or hyperthyroid symptoms, without thyroid enlargement. These were recommended for discharge on the ground that they were not capable of standing the strain of general military service, nor even of domestic service. By searching inquiry one could elicit from almost all men an occasional neurasthenic or fatigue symptom.

When a large number of drafted men was received there were always a few cases of alcoholism, delirium tremens, and drug addiction. The confirmed habitués could not be kept in the base hospital long enough to be reconstructed, and once they were in the ranks they could get the drug with comparative ease.

There were not many constitutional psychopaths (35 in all), but a few—sexual perverts, paranoid personalities, and inadequate personalities—were found and recommended for discharge.

The cases examined with reference to whether they should be brought to trial or not were principally for repeated absences without leave or for desertion. One case was for forgery, another for stealing, and one, dementia præcox case, for refusing to obey orders. Some were clearly feeble-minded, and proceedings against them were stopped and the men were discharged. Two measured between 12 and 13 years, but had good understanding of what they were doing—

desertion in the one case, stealing in the other—and were allowed to stand trial. Another, measuring 14 or 15 years, had a long insane hospital and penitentiary record and was also regarded as being sufficiently developed to stand trial for forgery. The decision in these cases had to be made with different conditions in mind from those which obtain in civil life. There was no indeterminate sentence or probation. It was either full acquittal and return to the ranks, or sentence to the military prison at Fort Leavenworth.

A number of cases of persistent enuresis was under observation. Most of these were mental defectives, with rather small bladder capacity (280 to 350 c. c.). One was a very intelligent fellow whose father corroborated all the essentials in his claims of never having been able to control his bladder while asleep. He, like the others, was discharged.

AT FORT OGLETHORPE, GA.^a

Recruits were examined as they came up for their physical examination at the local recruiting office, and a number were eliminated who might easily have been passed by the regular examining surgeon.

The most satisfactory work done was in the examining of the candidates for the second reserve officers' training camp at Camp Warden McLean. These examinations were held from August 29 to September 4 and were conducted by a large board of medical officers, including the tuberculosis board and the nervous and mental board. The routine examination was to test the pupillary reflexes, the superficial and deep reflexes, the gait and station, look for asymmetries and for scars of the head, face, and tongue, and for tremors, and to quiz them as to epilepsy, insanity, nervous trouble, syphilis, etc. The report on these examinations showed the following facts: (1) Eighty-seven noted as having neurological symptoms. (2) Of that number 25 were disqualified. (3) Each man was given the benefit of any doubt, and only those disqualified, whose symptoms were either pathognomonic of a serious nervous disease, or else of such a kind as to make one reasonably certain that they were unfitted for the service. (4) Thirteen were disqualified for Argyll-Robertson pupils, either with or without other symptoms, on the ground that, unless properly treated, sooner or later they would be entirely unfitted. (5) Ten were found with irregular pupils and 10 with unequal pupils; none of these was disqualified, though if Wassermanns had been done doubtless many of them would have been disqualified. (6) Of the others disqualified, 1 was a probable case of general paresis, 2 were psychoneurotics, 1 a case of hyperthyroidism, 1 an epileptic, and the majority of the remainder showed signs of cerebrospinal syphilis, all of whom were unquestionably unfit for the active duties of an officer.

AT CAMP UPTON, N. Y., AND CAMP GORDON, GA.^c

From May to September, 1918, inclusive, 54,000 recruits were examined at Camp Upton, N. Y. Of this number, 1,050, or 2 per cent, were rejected for

^a Letter from Capt. D. R. Gilfillan, M. C., base hospital, Fort Oglethorpe, Ga., Sept. 15, 1917, to Dr. Frankwood E. Williams, New York, N. Y. Copy on file, Historical Division, S. G. O.

^c Neuro-Psychiatry in Army Camps, by Maj. George E. McPherson, M. C., *Boston Medical and Surgical Journal*, 1919, cxxx, No. 21, 606.

nervous and mental disorders. At Camp Gordon, from July to October, inclusive, out of 58,850 men, 1,225, or 2.8 per cent, were rejected for similar disease and conditions.

At Camp Upton drug addicts constituted 17 per cent of the rejections for mental disease, while at Camp Gordon they made up 3.27 per cent of such rejections. A survey of 100 drug addicts gave them a mental age rating of 12 years, which is not materially different from that of other soldiers of the same educational-industrial level. As a rule, however, they were unskilled or poorly trained workers whose schooling, in 50 per cent of the men, did not extend above the fifth grade. Only 10 per cent were foreign born, and the 100 were equally divided between two Army drafts—one white, the other black. In both classes the drug addict from a rural community seemed to be a rare specimen.

Out of the 100 cases surveyed, 56 had been committed to penal institutions on charges other than drug addiction. Seventy-two men reported 173 unsuccessful attempts at a cure. Although not measurably deficient, these men were certainly inferior in fields other than intellectual.

One would have supposed that such cases as epileptics would have been well weeded out by various draft boards with less difficulty than obtained in many other classes of registrants. However this may appear, large numbers of epileptics entered camps, later to be discharged when their disabilities came to the attention of the neuropsychiatric examiner. Many men came to camp in the drafts with definite histories of seizures, showing scars on bodies and tongues, while some showed quite marked deterioration. Such were rejected, even on suspicion, some may say, but such a course seemed the common-sense one. There was, of course, no defense against the epileptic who willfully deceived and who showed no evidence of his infirmity. One simply had to wait for his attacks, and fortunately they generally appeared quickly under the ardors of drill. Probably about 3.5 per cent of 1,050 rejections were because of this disease.

MENTAL DEFICIENCY

Thirty per cent of rejections for nervous and mental disabilities were for mental deficiency, about 0.6 per cent of all cases examined. Such men offered a serious problem, as one had to overcome the disinclination of others to allow rejection of a man who looked healthy and strong. Orders from Washington instructed examiners to consider no man unfit for military service who should grade up to or over 10 years, mental rating. One must also grade 8 years or lower before he was to be considered unfit thereby for domestic duty.

It was believed that no other class of men made for so much mischief in the Army as did the feeble-minded. The stories of such soldiers proved the statement that ability to get along in civil life did not, of itself, insure satisfactory Army service. Such an idea was not workable, and a large number of cases examined were of just such soldiers who could not get along in a strange and exacting environment.

Psychological group examinations rendered an important service in calling to attention men who graded low, and that earlier than without such rating. All such were referred to the psychiatrist from the psychological boards, and in many cases were accompanied by a recommendation for rejection. More careful consideration of these men would find some fit for domestic duty, but, on the whole, the low raters did not prove "worth their salt."

The defects in fields other than intellectual were generally brought to notice when the higher grades of morons, for instance, failed to fit properly into their several assignments or organizations. Much that was reckoned as criminality or insubordination can be charged to the mental deficiency of these soldiers.

PSYCHOTIC CASES

The psychoses were limited to relatively few varieties. Manic-depressive psychoses were present in very small numbers, especially while the drafts were coming in. Most of the insane in the camps fell into the schizophrenic group and were generally called dementia præcox. In practically all of such soldiers it was possible to obtain outside histories which, together with the patients' stories, appeared to indicate that the acute psychotic episodes were but other stages in conditions which had existed for some time, even if below the surface. After worry at home over the draft to come, many men seemed just to go to pieces once they reached camp.

The alcoholic psychoses were not numerous. There were few cases of chronic alcoholism. Acute alcoholic hallucinosis was found in but few men. Outside of numerous men who had endeavored to accommodate themselves to too many farewell parties and who came to camp intoxicated and shaky, alcohol did not cause much concern in the examination of recruits.

Neurosyphilis contributed many cases for rejection, taken in the aggregate. In one draft of 800, luetic cases amounted to 0.7 per cent of men examined. The cities seemed to furnish a much larger percentage of luetic disabilities than did the country.

Experience in camps terminated a bit too early to speak of the toxic-infectious psychoses, of which little was seen.

CONSTITUTIONAL PSYCHOPATHIC STATES

Under this heading one may speak of a large group of men, many of whom were accepted for service only to become very unhappy and a source of great concern to everyone interested. At Camp Upton 50 were discharged during five months, while at Camp Gordon 299 were thrown out in four months. Emotional instability, inadequate personality, and sexual psychopathy provided the subdivisions under which the majority of psychopaths were classified. These three classes just mentioned were found to consist of poor material to begin with, and the demands of war did not help them in their adjustments.

PSYCHONEUROSES

One can hardly describe the amazing story of this class of recruits and other men who had entered the service only to fall by the wayside when active duty was undertaken. It is difficult to believe the frequency with which men were turned down for inability to drill or to march. Enuresis, hysteria, neurasthenia, and stammering furnished a large quota of rejections and discharges. It was interesting to learn the frequency with which other forms of the psychoneuroses had previously been afflicted with enuresis. Needless to say such men were constantly referred for disposition.

RESULTS

For the reasons that have been given, not all the soldiers admitted to the Army were examined by neuropsychiatrists, but the large majority of them were examined, by one method or another. Not all who were examined and found unfit for service were discharged, and not infrequently these came later to attention not alone through admissions to hospitals but also in more tragic ways.

Prior to February 1, 1919, there had been returned from the American Expeditionary Forces 4,039 cases of nervous and mental disabilities, a small number when it is considered that nearly 2,000,000 troops had been sent overseas and especially when deduction is made of the 3,181 soldiers who were sent overseas in the face of psychiatric recommendations to the effect that they were not fit for military service of any kind. The insane, suicide, and delinquency rates in the American Expeditionary Forces were extraordinarily low for an expeditionary campaign.

The accuracy of the examinations is attested by the fact that there was substantial agreement in results at different points, that they coincided almost exactly with the results recorded in the reports of the local boards as prepared by the Provost Marshal General of the Army, and by the fact that individuals detected and discharged at one camp were later again detected and discharged from another camp to which they had been sent. Local draft boards did not always take as final the rejection of recruits and when called upon for another increment of men would include in this increment, to be sent to another camp, men rejected at the first camp as nervously or mentally unfit. Records were received in the Surgeon General's Office of men detected and discharged from as many as five different camps, each time by a different group of examiners.

One other factor should be considered—a factor already hinted at, which refers less to the good of the Army than to that of the country as a whole. It has become clearly apparent that it is not the Army alone which makes war in these days. The whole country makes war, and like the Army, it, too, has military necessities which must be recognized. It can make use of many individuals who would be useless to the Army, and it should have exempted from it those whom the Army might take without being able to use. It seems to be incontestably proved that men who would not become insane in civil life, become insane through the suppression of individualism necessary in military life. If it can be shown that this is equally true for the neuroses and the military offenders, there will be collected a large class whose members, useless to the military, may be counted on for partial service in the civil community.

Partial service under military control is only moderately successful with any class, and in the class of psychopaths, in this country at least, it was a complete failure. The following circular letter was promulgated by the Surgeon General regarding this matter:¹⁰

It is the opinion of this office that there are no border-line cases in neuropsychiatry with the exception of certain cases of mental deficiency and drug addiction. The nervous instability of the psychoneurotics and those suffering from organic nervous diseases is such that they soon break down even in domestic service, and become a burden to the Army. If they are not fitted for full military service, they are fitted for no military service. Many of the cases of mental deficiency may be found fitted for labor battalions or domestic service. This is particularly true of the negro troops. At present no facilities are available for treating and rehabilitating the drug addicts.

The assignment of psychopathic individuals to the development battalions was tried but soon given up. It would seem wiser, to leave to the civil community from the beginning these individuals who can not be made into soldiers.

In addition to the rejection of recruits, it was considered important to prevent from being returned to duty, or discharged on duty status, those who had suffered from psychoses, even if they had recovered from them in the service. The recommendation was made accordingly by the Surgeon General that cases of this class should be discharged on Form 17, A. G. O., regardless of any improvement or cure that might have taken place.¹¹

The various types of nervous and mental diseases which disqualify from military service will be discussed elsewhere. They are, with the number of each class rejected as of May 1, 1919: ¹¹

	Number	Per cent
1. Psychoses, or mental diseases	7,910	11
2. Epilepsy	6,388	9
3. Organic nervous diseases	6,916	10
4. Glandular disorders affecting growth	4,805	7
5. Neuroses, or functional nervous diseases	11,443	17
6. Inebriety (alcohol and drugs)	3,878	6
7. Mental defect	21,858	31
8. Constitutional psychopathic state	6,196	9
Total	69,394	100

REFERENCES

- (1) Letter from The Adjutant General of the Army, to the Surgeon General, July 22, 1918. Subject: Mentally unfit in replacement troops. (Transmitting extract from cablegram No. 1464, dated July 15, 1918, from General Pershing.) On file, Record Room, S. G. O., 201.6 (Misc. Div.).
- (2) Memorandum for Colonel Howard, S. G. O., from Frankwood E. Williams, major, M. C., division of neurology and psychiatry, S. G. O., August 14, 1918. Subject: Enlisted men recommended by psychiatric examiners for discharge already carried abroad with organizations, despite recommendations to the contrary. Copy on file, Historical Division, S. G. O.
- (3) Circular No. 22, S. G. O., August 1, 1917. Subject: Examinations in nervous and mental diseases.
- (4) Letter from The Adjutant General of the Army to all department commanders; the commanding generals of all divisions, and ports of embarkation; and the commanding officers of all camps, recruit depots, excepted places, August 22, 1918. Subject: Special examiners.

- (5) Office Order No. 97, S. G. O., November 30, 1918. On file, Record Room, S. G. O., Correspondence File 342.15 (Misc. Div.).
- (6) Letter from the Surgeon General, U. S. Army, to the Division Surgeon (name of division and camp) (undated). Subject: Recognition and elimination of the mentally unfit and of those suffering from nervous disease. Copy on file, Historical Division, S. G. O.
- (7) Circular Letter from the Surgeon General, U. S. Army, to division surgeons, October 18, 1917. *Also:* Bulletin No. 4, W. D., February 7, 1918.
- (8) Mimeographed memorandum for organization commanders, concerning neuropsychiatric surveys.
- (9) Report on Hazelhurst Field, Mineola, L. I., by Maj. Stewart Paton.
- (10) Circular Letter, S. G. O., undated.
- (11) Circular Letter No. 95, S. G. O., February 19, 1919. Subject: Disposition of insane.

CHAPTER V

OBSERVATION AND TREATMENT

All patients admitted to the neuropsychiatric wards received a complete physical, psychiatric, and neurological examination and, where indicated, psychological and special laboratory examinations. The following "Guide," prepared by the National Committee for Mental Hygiene, was found helpful in the psychiatric and neurological examinations:

GUIDE TO THE PSYCHIATRIC AND NEUROLOGICAL EXAMINATION OF PATIENTS AND THE RECORDING OF THE OBSERVATION

The following notes are designed to serve as a guide to the psychiatric and neurological examination of patients in the military hospitals of the Government in order to insure uniformity of recording.

PSYCHIATRIC EXAMINATION

In the guide to the psychiatric examination not only the special cases which may be encountered as a result of war, but also all the types of psychoses and neuroses which occur during peace time as well have been considered; in other words, an attempt has been made to cover all possibilities in this outline, but to do it with special reference to the needs of a hospital receiving only military patients.

The different aspects to be looked into in cases with mental symptoms (be they of the nature of definite psychoses or of psychoneuroses) are grouped under several successive headings. It is by no means necessarily the sequence which is best followed in every instance. We have to be guided in this by the condition of the patient, but it is important that all of these aspects should be covered in every case. On the other hand, it should be borne in mind that a given case may be so obviously normal in regard to some of these aspects that that part can be dismissed with a very brief examination.

The examiner should make use of his own knowledge of military life and make constant comparison between the patient's attitude toward the various phases of life in barracks, camp, or the field, and his own observations as to the attitude of other soldiers. The examiner should make the best possible use of the fact that all his patients are soldiers.

1. BEHAVIOR, ATTITUDE, AND EMOTIONAL STATE

Observe first the general demeanor of the patient as he enters the room (the condition of his uniform, his hair, his finger nails, etc.), and his reactions to a few simple questions of the type which a physician would naturally ask, such as questions about the patient's health, comfort, etc. Note also whether he shows evidence of loss of sleep, having been crying, bruises, suggesting fighting or rough handling. Note whether he is mindful or unmindful of the attitude of a soldier with an officer; whether his attitude toward the examiner is respectful, hostile, friendly, puerile. At the end of the examination the preliminary observations should be supplemented (in this part of the record) by a summary of the observations regarding behavior, attitude, and emotional state, which are made throughout the examination.

A. Accessibility.

- (1) Natural, free, alert.
 - (2) With definite emotional changes.
 - (a) Depressive: Depressed, gloomy, worried, uneasy, anxious, fearful, etc.
 - (b) Elated: Satisfied, happy, exuberant, etc.
- More complex emotional states: Suspicious, disdainful, perplexed, etc.

B. Inaccessibility.

- (1) Without definite emotion: Apathetic, dull, somnolent.
- (2) With more active emotional changes: Depression, anxiousness, uneasiness, tenseness, perplexity, suspiciousness, disdain, etc.

Certain reactions may at once lead naturally into questions as to what is the trouble; e. g., with an evident worry, one would ask, What is it you worry about? or, What can we do for you? and the like.

II. MOTOR CONDITION

A. General motility.

- (1) Normal.
- (2) Overactivity, excitement.
- (3) Diminished activity, such as slowness of motion (constant or inconstant), complete inactivity, possibly with catalepsy, resistiveness.
- (4) Queer, bizarre actions.

B. Speech.

- (1) Normal in amount.
- (2) Increased in amount (talkative, singing, shouting, noisy).
- (3) Diminished in amount; slow speech (constant, inconstant), mutism.
- (4) Disordered (other than defects suggesting organic trouble), stuttering, "baby talk," explosive, accompanied by facial contortions, movements of hands, etc.

III. STREAM OF THOUGHT

In spontaneous speech or answers to questions.

- (1) Clear, logical, relevant.
- (2) Jumping from topic to topic but with fairly comprehensible associations.
- (3) Retarded.
- (4) Irrelevant—incomprehensible, disconnected, with queer ideas.
- (5) Fragmentary, often disordered words, paraphasia and difficulty in word finding.

All this may be observed in the patient's spontaneous speech and in answers to questions. If he is not spontaneous, then ask further questions. In this it is best to follow the patient's lead.

IV. CONTENT OF THOUGHT

- (1) Content of any worry or anxiety regarding present and past situations, physical complaints; apprehensions about the present and future, etc.
- (2) Compulsive ideas, obsessions, phobias.
- (3) Delusions, hallucinations, peculiar mental attitudes. Some of these may have come out before. In that case it is best to summarize briefly what has been obtained thus far and then to proceed with recording the further study.

It should be remembered that it is not merely a question of recording the existence of delusions and hallucinations and the like, but a question above all of inquiring into and recording their content. Give patient's own words regarding hallucinations, etc.

If nothing has thus far been obtained and the patient makes, nevertheless, the impression of being psychotic, the following questions may bring important ideas:

- Have you had any peculiar experiences?
- Have people said things about you?
- Does any underhand work seem to be going on?
- How do you fit into the company (battery, mess, wardroom)?
- Has anyone made queer remarks? Made veiled references to you?
- Do things seem natural or unreal?
- Do you hear voices? Or, sometimes one may simply ask: What do they say?
- Have people done things to you?
- Has everyone been kind to you?
- Have you had strange dreams?
- Have you had visions?

Sometimes questions about certain topics bring out peculiar mental attitudes or peculiar ideas, such as:

What do you think about electricity, or magnetism, hypnotism, thought transference, wireless telegraphy? etc.

Sometimes the question, Who are you? leads to important answers.

V. ORIENTATION

Does the patient know the day, month and year? Does he know what place he is in, who the persons are about him; or does he understand, at any rate in a general way, the situation?

VI. MEMORY AND THINKING

(1) With regard to old events.

(a) Inquiry into life history before the advent of the psychosis or neurosis as regards the main data (birthday, positions, dwelling places, as well as inquiry about events since enlistment, etc.), with dates. This gives a good idea of the patient's capacity to think and correlate the different facts (look for discrepancies) as well as of his memory.

(b) Calculation—simple tasks are a matter of memory; more difficult ones test the patient's capacity for concentration and thinking.

(c) Writing—spontaneous and to dictation.

(2) With regard to recent events: Such questions as, How long have you been in this place? Where did you come from? What happened yesterday? What did you have for dinner? etc., will be found useful. (Examiner should use freely his own knowledge regarding military routine.)

Definite tests for retention, such as the remembering of a name and address for two or three or five minutes while questions are asked during the time intervening. For span of memory, test the patient's capacity to repeat series of 8, 6, or 5 digits.

VII. INTELLECTUAL LEVEL

If it is settled that no interference with the thought processes exists, an attempt should be made to determine the patient's intellectual level. Test especially the general information regarding the patient's habitual environment, as well as the knowledge he is supposed to have gained in his military experience. Refer also to the guide for the examination and determination of mental deficiency.

The mental tests are often of value even when the permanent intellectual level can not be obtained, since the details of functional capacity may prove of diagnostic value if successive spaced examinations are made.

VIII. THE PATIENT'S OWN ACCOUNT OF THE DEVELOPMENT OF HIS PSYCHOSIS OR NEUROSIS

The object here is to trace in detail the origin and development of the condition from which the patient suffers. Even if inaccurate or obviously inconsistent, the patient's account is, nevertheless, important.

In the case of mental disorders, functional or organic, due to the more specific war causes, it is especially important to inquire into:

(1) The patient's mental make-up before enlistment as regards success or failure in life; the extent to which he was able to get along with other people; his capacity for adaptation to new situations; his habitual mood; his habitual reactions to difficulties in life, responsibilities, stress, etc.; special traits, such as fear of thunderstorms, fear of going underground, sensitiveness to seeing blood; his attitude toward the suffering of others, dread of special diseases or modes of death, etc.

(2) The patient's adaptation to the life of a soldier; i. e., his attitude toward the war, his adaptation to training, his adaptation to fighting. Note his first reactions to this (fear, horror, disgust). Inquire how these first difficulties were overcome, if they were overcome. Check up patient's story by reference to officers and comrades (see disciplinary record).

- (3) Details of any fatigue-producing situations, special stress or loss of sleep, etc.
- (4) Reaction to fatigue ("jumpiness," irritability, tenseness, poor concentration, etc.).
- (5) The first symptoms of failure of adaptation, if indicated by the patient's history, such as the wish of deliverance from the situation (note the special form which such wishes took, such as the desire to be wounded, to be taken prisoner, or the desire for death or the war ending); an increase of nervousness and anxiousness about his own safety; specific fears; the development of feelings of horror about the situation (note special supersensitiveness).
- (6) Disturbing dreams (note content).
- (7) Causes which led to the definite breakdown:
 - (a) Direct injury, wind concussion, burial, "gassing," etc.
 - (b) Witnessing unusually distressing sights; or friction with superiors or refusal of leave, or distressing news from home, etc.
- (8) Onset of acute symptoms: Loss of consciousness (note duration); dazed condition; clouding of consciousness with variations in intensity, etc.
- (9) History of condition since that time.
- (10) History of treatment and its effects; also history of military management of patient's illness and the patient's attitude toward this.

In case of psychoses much regarding the development may already have been brought out, especially under the heading of content of thought. It is here gone into more thoroughly if the patient is thought capable of giving it.

IX. ATTITUDE TOWARD THE MENTAL OR NERVOUS DISORDER

In psychoses this refers especially to the question of whether the patient understands that he is mentally ill.

In the neuroses it refers more to the attitude in general which he takes toward his symptoms, e. g., does he think they are all due to stress or partly to his own failure in adaptation?

NEUROLOGICAL EXAMINATION

Condition of body

Facies, growth, abnormalities in development, glandular trophic and vasomotor phenomena, including variations in weight, growth of hair, amount of fat, asymmetries, etc.

In functional cases it is especially important to notice trophic and vasomotor phenomena such as skin eruptions, pigmentation, pallor, coolness of the skin, edema, cyanosis, increase or diminution of sweating, excessive dryness, peculiar odors and secretions, pulse rate, pain in the head, palpitation, breathlessness on exertion, precordial pains. If unusual trophic or vasomotor symptoms occur it is important to determine whether or not these are the result of the patient's own actions.

General appearance of patient as regards resemblance to some disease.

CRANIAL NERVES

First nerve (olfactory).—Anosmia, parosmia.

Second nerve (optic).—Acuteness of vision and, if impairment, description of same; irritating visual phenomena. Pupils, whether round or irregular; their reactions to light and to movement of eyeballs. Visual fields (note especially in shell-shock cases variations from the normal such as reversion of color fields, etc.). Ophthalmoscopic examination; exophthalmos and enophthalmos; irregular size of palpebral fissure.

Third, fourth, and sixth nerves (ocular nerves).—Ptosis or drooping of the upper lid, ocular palsies, description of double vision, convergence.

Fifth nerve (motor).—Muscles of mastication, masseters, temporals, and pterygoids. (Sensory portion.) Note disturbance of sensation for touch and pain and temperature. Pains in face. Loss or impairment of taste in anterior two-thirds of the tongue. Look for parageusia or perversion of taste sense in shell-shock cases.

Seventh nerve (peripheral facial palsy).—Inability to wrinkle forehead, shut the eye, show teeth. With central facial palsy, can wrinkle brow and shut the eye. Note loss of taste on the affected side. Electrical examination to be made if possible.

Eighth nerve.—Cochlear division: Determined degree of deafness by tuning fork or voice and then make a closer examination and determine whether it is due to the destruction of the nerve itself, or the middle ear, or if it is functional. Vestibular portion: Examination should be made by so-called Bárány tests either by means of a turning chair or irrigation of the external ear by water.

Ninth nerve.—Inability to swallow. If impaired, note degree of inability to swallow food and regurgitation of same. Loss or impairment of taste in posterior third of the tongue. Look for parageusia or perversion of taste sense in shell-shock cases.

Tenth nerve.—Movements of vocal cords, character of speech, and whether or not speech and breathing are interfered with.

Eleventh nerve.—Action of sternomastoid and trapezius muscles.

Twelfth nerve.—Ability to protrude the tongue and its direction and impairment of movement. Atrophy and tremor.

Motor symptoms

Station and gait. Deformities and contractures. Convulsions, local spasms, ties, tremors (coarse or fibrillary), myokymias, etc.

Limbs: Determination of strength by grip and movements, both voluntary and against resistance. Tonicity, atrophy, or hypertrophy, coordination of extremities and trunk (ataxia), cerebellar synergy.

Reflexes

Cutaneous.—Conjunctival, corneal, epigastric, cremasteric, plantar, Babinski, defense.

Tendon.—Biceps, triceps, wrist, patellar, Achilles.

Muscle reflexes.—Clonus: Wrist, patellar, ankle. Special: Kernig, Trousseau.

Electrical examination

Faradic response.

Galvanic response and nature of the reaction.

Speech disturbances (organic functional)

Organic.—Motor aphasia: Patient knows what he wants to say, understands what is said to him, can read, but is unable to express himself either wholly or in part in spoken words or by writing.

Sensory aphasia: Patient can talk and can write, but neither his speech nor his writing make sense because he is word deaf; that is, he does not understand the meaning of the sound of words.

Sensory motor aphasia: A combination of motor and sensory aphasia, the extent of the disturbance depending upon the completeness of the lesion.

Functional.—In functional or shell-shock cases, look for various forms of speech defects such as mutism, stammering, stuttering, and verbal repetition.

Hearing may be lost often with speech. Hyperacusis or extreme sensibility to sound is very common.

Sensation

Studied in head, trunk, upper and lower extremities with finger tip, cotton-wool, camel's-hair brush, esthesiometers, hot and cold test tubes, etc.

Epicritic sensibility.—Superficial touch, light pressure, warmth, coolness, tickling (hairy surfaces), tactile localization, and tactile discrimination.

Protopathic sensibility.—Pain sense, extreme heat, extreme cold.

Deep sensibility.—Muscular, tendinous, arthrodial.

Sense of position and passive movement, deep pressure. Astereognosis. Asymbolia. Vesical, rectal, and sexual functions.

Lumbar puncture

Cell count and Wassermann.

Physical examination

This should be a general physical examination including condition of the heart, lungs, blood pressure, blood for Wassermann, etc.

Active treatment as contrasted with custodial care was emphasized in all neuropsychiatric wards and hospitals. Diagnosis was not considered an end in itself. Individualization of the patient was insisted upon. Patients, in so far as possible, were not permitted to be idle. From the day of his entrance into the hospital an effort was made to see that the patient was kept occupied. In this important procedure the occupational therapy worker was invaluable.

In most of the hospitals the neuropsychiatric staff met daily to consider difficult cases, to discuss the advisability of discharging certain patients, and to review the results of the examination of recently admitted patients. In some of the hospitals a weekly conference was held, to which all the medical officers of the hospital were invited. At these conferences papers on such psychiatric subjects as might be of interest or benefit to the general medical officer were read and patients were presented and discussed. These conferences frequently aroused much interest and were well attended. A further opportunity to familiarize the general medical officer with psychiatric case studies was presented by the regular hospital staff conferences. The neuropsychiatrists took their turn in presenting to the entire staff of the hospital interesting psychiatric material.

The experience of those responsible for the neuropsychiatric work at Walter Reed General Hospital, Washington, D. C., is more or less typical of the experiences elsewhere and is worth recording.

Prior to the World War mental patients at Walter Reed General Hospital were cared for in the basement of the administration building along with the military prisoners. The place was wholly unsuited for prisoners, let alone patients. But the feature which evidently recommended it was that, having been built for prisoners, it was heavily barred and guarded and the insane could not get out. Treatment was impossible and the care in all respects, except possibly food, was about the equal of the county asylum of the old type. Before the end of 1917, however, psychiatry at Walter Reed General Hospital had improved materially. Five neuropsychiatric wards, of wooden construction, were opened. The first ward was built in accordance with the building plan of the neuropsychiatric wards of the base hospitals; that is, a ward divided into three sections so as to provide a better classification of patients. The other wards were dormitory wards similar to the general medical wards. As it was planned to use a section of the first ward for disturbed patients, the rear portion of this ward was screened with iron-wire mesh. The screening was never completed and a part of what had been put up was later taken down.

The five wards at Walter Reed were open wards without bars or mesh, and were comparable in every way with the general medical wards of the hospital. As a matter of fact, it was possible, in showing visitors through the hospital, to take them from the medical to the neuropsychiatric wards without their knowledge of when they had made the change. The same lack of restraint was to be found at Hospital No. 2, Baltimore—no bars, no bolts, no mesh. The ward physically was no different from any other ward in the hospital, except

the ward for military prisoners. The psychiatrist's difficulty in conducting this kind of a ward was not so much in keeping patients in as keeping patients out. The ward in the early days of the hospital was so much more attractive than the other wards that it was at times difficult to keep other patients from coming over to visit, play the piano, listen to the victrola, or work in the shop.

The standards were equally high at Fort Benjamin Harrison, Fort Sheridan, the Letterman General Hospital, Fort McPherson, Fort Sam Houston, and Fort Des Moines. Each differed somewhat from the others, depending upon local conditions. None were as free of bars and mesh as Walter Reed General Hospital or General Hospital No. 2, at Fort McHenry, Md., but in each these evidences of incarceration were much reduced and further reduction was contemplated, the chiefs of the service being convinced that the bars and the mesh were not only unnecessary but that treatment could be carried out much better without them. As a matter of fact, many wards that had originally been barred or meshed in order to relieve the anxiety of a commanding officer became open wards, with doors unlocked and patients given much freedom.

That the open-ward system was successful there can be no question. The success depended upon a number of things. The spirit of the wards was important. The spirit was distinctly that of a hospital, not that of a jail. The patient was not constantly reminded of his situation by the sight of bars; he realized that at least some one considered him sick and that for that reason he had been brought to a hospital where he was under no greater confinement than other patients in the hospital; at no time was he stung with the humiliation of imprisonment. Incentive to escape was reduced to a minimum; the patient came to regard himself possibly as sick; his ingenuity was not aroused to out-trick his jailers or to create out of nothing instruments to remove bolts and bars. The importance of careful classification of patients was kept constantly in mind.

CARE OF CASES OF NERVOUS DISEASES

The treatment of organic diseases of the nervous system, under which heading epilepsy is classed at this point for convenience, was of little military importance, as these conditions, almost without exception, disqualified for service. Few of them were susceptible of any great degree of amelioration by such treatment as was afforded in our military hospitals.

The hospital history of all the cases of this general class was that they were retained in the service for antisiphilic treatment, for tonic treatment, or for operation, as the case might be, and then were discharged from the Army. They showed no differences in symptoms, course, or indications for treatment in the military service from similar cases in civil life.

One of the important demonstrations of the war was the great number of men from all walks of life who were conditioned in their practical usefulness by functional nervous disorders of some kind. These came in for dramatic prominence as cases of shell-shock, developing in both front and base sections in France; but still larger numbers were refused entrance into the Army, and many were discharged from the camps on surgeon's certificate of disability.

The number of neuropsychiatric cases rejected or discharged at home may be divided into two general classes—the psychasthenic, or neurasthenic, and the hysteric. In the former the patient was concerned with a chain of mental difficulties, and was constantly provided with long explanations as to why he did not successfully carry on his military duties. These explanations referred to various purely subjective symptoms, which might come to light when the man was reported as a patient. Under such circumstances he could be found in any of the various medical services, as the symptoms might be referred to any organic system. These cases were especially found in connection with the “effort syndrome,” and with the whole group of cardiovascular conditions. Symptoms referable to the stomach and intestines were particularly frequent.

The cases called hysterical were apt to be associated with more definite symptoms, such as paralysis, contractures, abnormal gaits, etc. In this hysterical group, suggestion as a factor in determining the type of symptom was much more evident than in the psychasthenic group; also these patients were frequently noticed to be less intelligent.

The cases returned as neuroses from overseas were so similar to the home cases in their symptoms that it can be said that there appeared to be no fundamental clinical differences between neuroses developing in actual warfare and those which developed in the training period. The probability is also great that there is slight difference, with the exception of some war coloring, between the neuroses of war and those of civil life.

Practically all of the symptoms reported in France were observed in the cantonments at home. But there existed a difference in degree, in that therapeutic efforts to combat functional nervous difficulties could be made more successful in battle areas than could be done in the zone of the interior. This was probably because, on the one hand, the discipline and morale was better near the front, and, on the other, that real war neuroses were more acute conditions, betraying less fundamental character defects, and appearing as the immediate results of trauma, especially of an exhaustion brought about by mental strain, physical over-exertion, exposure to cold and lack of food. The patients, in other words, if taken immediately in hand, could be brought back to normal, or to a point approximating normal sufficiently to enable them to be returned to duty, full or limited.

This relatively favorable prognosis, under proper therapeutic conditions, did not apply, of course, to all of the overseas cases. Most of the patients returned to the United States during the period of active combat presented character defects of a prominence that made cure under any military conditions most difficult, if not improbable. They should have been detected—many of them were, but were not discharged—and eliminated before their organizations were ordered overseas. But even some of these, who had resisted all efforts at cure overseas, could be brought to the point where at least all symptoms disappeared in the home hospital. One enlisted man who had displayed a useless arm in several of the hospitals in the American Expeditionary Forces resumed the use of it at General Hospital No. 2, Fort McHenry, after 48 hours of deprivation of tobacco, combined with kindly suggestion.

But the treatment of these cases which met with such general success overseas was never tried out in this country. The short duration of the fighting after our entry into the war afforded no opportunity for such a trial here. Had the war progressed further and had the time come when the United States was actually pressed for men, some definite plans would doubtless have been formulated for the reconstruction of war neurosis cases at home. Plans looking to this end were under consideration in the Surgeon General's Office at the time the armistice was signed. It would have required a more elaborate and special organization than any that had been put into effect. Development battalions had been organized, particularly for physical disorders, but they did not provide sufficiently detailed classification to make them serviceable for neurosis cases. Such cases as were assigned to them soon fell out, and so secured their discharge. Because of early discharge it is difficult to draw any very definite conclusions as to the curability of the functional cases which occurred in the home camps.

As it was, the neurotic soldiers could not altogether escape being regarded in a sense as malingerers. An inquiry initiated by the division of neurology and psychiatry¹ brought out that the old point of view, that all functional cases were malingerers, had given place to a more rational view; that most Army surgeons, while noticing the numbers of neurotics among the troops, accused few of being so deliberately and with voluntary intention. But in spite of this there was some feeling on the part of Army surgeons that such soldiers did not play the game quite fairly, that they could have done more if they would. In other words, there seemed to be the general conviction that under certain circumstances many of these men could have been made useful for some duty.

OCCUPATIONAL THERAPY

It was the consensus of opinion of the officers who came most closely in contact with the occupational therapy work that to it must be credited much of the success of the neuropsychiatric wards. One element of the success of occupational therapy in the military hospitals was certainly the high standard of qualification insisted upon by the training schools that prepared these workers and later by the Army itself. A second element of success was that from the first the importance of occupational therapy was insisted upon and it was given an independent and important place in the scheme of hospital organization. It was not subordinated to nursing. It was not considered as a part of nursing but as a part of therapy, and, as therapy, it was under the immediate direction of the physician. The worker was responsible not to the nurse but to the physician. Occupational therapy was introduced into the military hospitals by the division of neurology and psychiatry. The first occupational therapy workers employed by the Army were the six women included in the personnel of Base Hospital No. 117.² So immediate was the success of these women that the demand for similarly trained women grew.

The feasibility of introducing reconstruction procedures into the neuropsychiatric wards as a whole was doubted, in our earlier experience being considered applicable only to the cases which were less disturbed mentally. The

benefits of occupational therapy became so pronounced, however, and the aides so skillful in their approach after several months' experience, that the work was given to all except the extremely violent. This furnished systematic employment to restless patients, reduced the introspection of neurotics and the delusions of the insane, seemed to shorten the duration of the præcox or manic episode of the psychoses, and decreased the necessity for restraint in the more disturbed cases.³

Courses were given in bench woodwork, carpentry, painting and staining, machine work, pattern making, automobile mechanics, English, arithmetic, bookkeeping, stenography, typewriting, drafting and designing, geography, agriculture, history, economics, weaving, basketry, printing, lettering, and poster making. Frequent entertainments of various kinds were given, with an effort to have the patients put on their own shows, and a band was organized. One hospital maintained an excellent library of nearly 4,000 volumes, with the leading periodicals and newspapers from the principal cities of the country.⁴ The library was considered to have been an important factor in the reconstruction work.

PSYCHIATRIC SOCIAL WORK

Expert consultation in other fields was available at all times and was utilized when necessary. In cases in which the diagnosis was not clear for lack of full information, the psychiatric social worker was called upon, and, in most cases, was soon able to place before the physicians a more or less complete history of the patient's life and condition before entrance into the Army. The importance of psychiatric social work, and of social work generally, was first demonstrated at the special hospital for neuroses at Plattsburg. This demonstration was made by the division of neurology and psychiatry of the Surgeon General's Office through the cooperation of the American Red Cross. The success of the work at Plattsburg led to the assignment of from one to three psychiatric social workers (psychiatric aides) to each of the general hospitals maintaining neuropsychiatric wards and later to the assignment of medical social workers to all hospitals. Where patients required continued care after discharge from the Army, the social worker made inquiry in regard to the family conditions to which the soldier would be returned and the possibilities of local care, and made arrangements with the family, the State authorities, or local Red Cross representatives for the reception of the patient.

The activities of the neuropsychiatric social service at General Hospital No. 30, Plattsburg, N. Y., were reported as follows:⁵

Soon after the soldiers began to return from overseas, it was discovered that many came with reports containing very little medical information. The soldiers sent to the military hospital for war neuroses (United States Army General Hospital No. 30), at Plattsburg Barracks, N. Y., not infrequently came with only a diagnosis. Some presented symptoms which indicated that their condition was probably chronic and had existed for years previous to their entrance into the Army. Others came with a diagnosis of epilepsy, but while in the hospital had no seizures. The medical officers began to feel the need for information other than that secured from the soldier himself, and through Major Hutchings, chief of the neuropsychiatric service of this hospital, a request was made for the appointment of a social worker at Plattsburg. In consideration of the immediate need for this worker, and the firm belief of all in the necessity of the worker's having complete freedom in developing her work,

the American Red Cross was asked by the Surgeon General to assist the Medical Department of the Army in demonstrating the value of this type of work in military hospitals. The necessity of this request was due to the fact that, under the existing Army provisions, the social worker could be appointed only as a reconstruction aide, giving her a status lower than a nurse. That the success of psychiatric social service in military hospitals would depend largely upon the efficacy of its organization was hardly questioned, but the significance of its establishment directly under the control of the military authorities and the supervision of the medical officers was not appreciated at this time. It was the consensus of opinion, however, that there might be administrative difficulties if the work was placed under the direct auspices of a civilian and nonmedical organization, when the control of the hospital was military. It was also believed that the very character of the work necessitated its organization as a department of the hospital under medical jurisdiction and that dual control would ultimately weaken its effectiveness.

In view of these facts, no definite decision was made regarding the status of the work, but there was a general understanding between the Army and the American Red Cross that it would be an advantage to have the worker considered as an unofficial adjunct to the medical staff and under military authority.

On September 1, 1918, the social worker began her duties at the military hospital for war neuroses, Plattsburg, N. Y., the American Red Cross having agreed to pay her salary and allow her to be considered a part of the military régime, having no status under the organization of the American Red Cross. She was assigned an office in one of the hospital barracks, accessible to the wards and the administrative offices, and was supplied with sufficient equipment to start her work. Through the courtesy of the military authorities, officers' privileges, such as living in officers' quarters and eating at the officers' club, were extended to the worker.

Her duties were not defined, but she was expected to secure early histories through correspondence to assist the medical officers in the diagnosis of difficult conditions and to help them in reaching a decision as to whether the soldier's condition occurred in line of duty or prior to his enlistment or induction into the Army.

For five months the social work of the hospital was carried on by one worker, with the assistance of enlisted men from the Medical Department, and convalescent patients, who were assigned for messenger and clerical service. The stenographic assistance was provided by the hospital until the 1st of January (1919), at which time the bureau of camp service of the American Red Cross donated the salary of a full-time stenographer. It was extremely difficult to handle effectively the amount of work referred to the department, owing to the lack of professional and clerical assistance. The delay in the appointment of social workers was due to the fact that it was impossible for the American Red Cross and the Army to reach a decision as to the organization under which these workers should be appointed until the latter part of 1918, and it was not until the latter part of January, 1919, that the provisions made by the Surgeon General for the appointment of psychiatric social workers in military hospitals under the status of reconstruction aides became effective. By January 31, 1919, two workers had reported for duty at Plattsburg.

After the establishment of the department, the following divisions of work were developed: (1) Securing early histories; (2) social case work; (3) after-care; and (4) administrative work. The scope of work was limited, owing to lack of assistance, simply to handling the most urgent cases.

SECURING EARLY HISTORIES

The majority of these investigations have been to establish, in the cases referred, the diagnosis of epilepsy, hysteria, or other conditions, prior to the soldier's admission into the Army, in order to decide the Government's liability and the soldier's rights for compensation. In most instances the soldiers have been interviewed by the social worker in her office, and have been questioned regarding their early history. Special emphasis has been placed upon securing the names and addresses of individuals who would be in a position to give the necessary information and encouraging the soldier to give his own statement regarding his illness. Inquiries in general have been addressed to physicians, principals of schools, former employers, and immediate relatives. In 90 per cent of the cases replies have been received, the greatest assistance coming from physicians and employers. The school reports have

shown that, in most instances, the health records have been incomplete. The value of the replies can not be statistically given, but in the majority of cases the replies have indicated a past history of nervous instability, if not a definite history of nervous or mental disorders. There have been a number of instances in which soldiers' statements to the medical officers and the social worker have been found untrue, generally in the cases of soldiers who were undoubtedly malingerers, desiring to secure compensation or to avoid military service. Examples:

Case 1.—The soldier claimed his epilepsy occurred in line of duty. The investigation proved that he had been an epileptic for years; that he had had great difficulty in holding positions, and had not been able to support his family.

Case 2.—A soldier, having definite seizures of epilepsy, grand mal type, at the hospital, claimed he had never had them before entering the Army. The history he gave showed that he had been a wanderer, and had never lived in any place longer than a few months, following many occupations. It was felt that it would be impossible to secure any past history, and that his condition would have to be considered in line of duty. This soldier had never been overseas, and had a record of intemperance in the Army. After considerable questioning the social worker was able to secure the names of a few former employers, and through the interest and assistance of one of our western railroads the diagnosis of epilepsy prior to enlistment was definitely established.

Case 3.—A soldier coming from overseas, with a very meager history and a diagnosis of epilepsy, had no seizures while at the hospital. The investigation showed that he had been an employee in one of our epileptic institutions, having been discharged for larceny, and had had a court record. No history of epileptic seizures was obtained, although the soldier stated that he had had them.

Case 4.—A soldier claimed his condition occurred in line of duty and it was learned from his wife that he had nocturnal attacks of epilepsy.

Owing to the success of the investigations the medical officers, prior to the signing of the armistice, were considering referring to the social worker all overseas cases, classed as epileptics in line of duty, whose histories were inadequate to establish this fact. The cases referred were so numerous that it was impossible for the social worker to handle them alone, and it was necessary on account of the other important types of work to limit the number to those which the medical officers felt could not be decided without further information. The scope of this division of work was therefore considerably limited and has not been developed to the extent of its value.

The foregoing facts seem to indicate the value of investigating cases involving the question of compensation prior to discharge from the Army, as it would seem logical that histories, as described above, would be almost impossible to obtain after the soldier had made a claim for compensation.

SOCIAL CASE WORK

One of the most important functions of the department has been social case work, the assistance rendered the soldiers who have been troubled with personal or family difficulties. The chief complaint has been in relation to their financial circumstances. Many of the overseas soldiers, who had left the United States months ago, having made not only voluntary but compulsory allotments before they went over, returned to find that their families had not received their allotments. The number of soldiers applying for advice and assistance has been so great that it has been impossible to keep track of them. In general, the soldiers have been grossly ignorant concerning the Bureau of War Risk Insurance and its methods of operation. Of all cases investigated the statements of the soldiers regarding the nonpayment of allotments were found to be correct, but it was impossible to secure replies to inquiries sent to the Bureau of War Risk Insurance, except through indirect channels. The reasons given were general and to the effect that the allotments and Government allowances had not been paid owing to faulty execution of the forms in the beginning or that the wrong forms had been used. It was learned through the investigations made by the American Red Cross, at our request, that a great many of our soldiers' families were in serious financial difficulties as a result of this situation, and that the American Red Cross had been obliged to give financial aid. The need for a worker specially trained in handling these problems had been demonstrated in this hospital by the number of cases referred to the social worker for

investigation, not only by the soldiers themselves, but also by the officers in charge of this branch of work, who, owing to the pressure of work, have been unable to give the personal attention needed to adjust these difficulties.

Another particularly important phase of social case work has been the so-called reeducational, personal talks with the soldiers. Anyone at all familiar with the type of cases which have been under observation and treatment at this hospital realizes that some of the main symptoms have been restlessness and discontent, and a general attitude of lack of sympathy with the Government and Army life. The soldiers' complaints, such as the theft of their personal property, the nonpayment of their allotments, etc., seem to be well founded and have resulted in the feeling that the protection which would have been awarded them in civil life has not been given them in military life. Almost all have had one aim; namely, to get out of the service as soon as possible. The social worker believed that much could be done toward changing this attitude, at least in the men who came to her for assistance of one sort or another, and has made a special effort to give the soldiers a somewhat different point of view than they have had regarding the military system. That the majority of cases treated at Plattsburg showed mental inferiority as well as moral defects is evident. There has been a childlike attitude of the men regarding all phases of their army life and their social tendencies, as well as nervous instability. These reports have been filed with the soldiers' clinical records, and, although they have not, except in a few instances, influenced directly the disposition of the cases, may prove of inestimable value to the Government if claims for compensation are filed. The American Red Cross has been notified of the date of discharge and has rendered any assistance necessary, such as securing employment, medical supervision, and anything which may be required. The assistance given by the American Red Cross can not be overestimated, and the results have been exceedingly satisfactory. It is evident that the interest taken by the local Red Cross chapters in this group of cases will stimulate a keener community interest and appreciation of the mental hygiene movement.

ADMINISTRATIVE WORK

Another division of the work which might have proved of considerable value to the administrative department of the hospital, if it had been possible to have had more assistance, is that of answering inquiries from relatives, friends, and civilian organizations concerning the soldiers' condition and circumstances. The replies to these inquiries must of necessity be very carefully considered, for they must contain enough information to allay anxiety, and at the same time must not divulge any information which might give a false impression or serve as a basis for a claim against the Government. Owing to the fact that the social worker has been asked to answer many of these inquiries, it is reasonable to conclude that this work might be handled effectively by the social service department, whose workers are trained in dealing with problems of this type. The social worker has regretted exceedingly her inability to give information of a medical nature to the American Red Cross, because of their cooperation and interest, and the importance of having this knowledge in order to be able to give more satisfactorily the assistance required.

The social worker has been asked to investigate the need for furloughs in a number of cases where the reliability of the statements was questioned. Requests have also been received to investigate the need for the soldiers' early discharge from the Army because of dependent relatives, serious illness, etc.

The foregoing report shows in a measure the point of view of the social worker regarding the usefulness of social service departments in military hospitals and outlines, in general, the type of organization which seems necessary and the scope of work which might be undertaken. That a department of this type is essential has been established, and the conclusion drawn, namely, that the effectiveness of the treatment in military hospitals depends upon the cooperation and assistance of the community after the soldiers' discharge is undeniably sound and practicable. As to the financial value of such a department, the reports on early histories of the soldiers have conclusively shown that much expense might be saved the Government through the establishment of departments of investigation at the time the soldiers are under treatment in the hospital, rather than after the soldiers have been discharged and have filed their claims for compensation.

STATISTICAL SHEET

Number of individuals assisted	820
Sources from which these cases were referred:	
(1) Medical officers.....	558
(2) Soldiers.....	231
(3) Miscellaneous.....	31
Classification of cases according to reason referred. (NOTE.—These figures overlap because in some cases all 4 types of work have been done):	
(1) Securing early histories.....	191
(2) Social case work.....	668
(3) After-care.....	495
(4) Administrative work.....	96
Number of letters sent out.....	1, 428
Number of letters received.....	1, 166
Number of interviews with soldiers.....	960

ACTIVITIES OF NEUROPSYCHIATRIC SERVICES

The following accounts of the methods of observation and treatment employed in some of the more typical neuropsychiatric services in base and general hospitals are taken, without comment, from selected reports to which they are credited.

BASE HOSPITAL, CAMP SHERMAN, OHIO^b

All cases that could not be decided on at the preliminary survey (mental and nervous examinations of troops) were referred to the base hospital, either to be admitted as patients for observation or to be examined thoroughly at greater leisure. The psychiatrist at the base hospital saw these men, made careful examinations, often spending an hour or two at a time on one patient, applying Binet or other tests where needed. He wrote for information to relatives, employers, or attending physicians; or got information as to the man's behavior from commissioned or noncommissioned officers or privates, with a view of getting such data as might help in the diagnosis of epilepsy, mental deficiency, peculiarities, malingering, etc. It was found very helpful to have a noncommissioned officer go to the patient's company to make inquiries about his general adaptive reactions or about some special incidents.

Besides the cases thus referred by the surveying examiners, there were sent to the base hospital by the line officers patients in whom they suspected evidences of nervous or mental disease. In the camps where psychological surveys were made, the psychologists also referred cases to the psychiatrists. These cases were examined in the same way as those sent by the psychiatric surveyors.

In addition to these, many cases were seen in consultation in the other wards of the base hospital. Many of these were neurasthenics, in whom the question of malingering arose. Sometimes the advisability of operating on a given patient came up, as, for example, in a case of hernia in a defective. If he was too deficient mentally to make a good soldier, operation was advised against.

Another group of cases that came before the psychiatrist was that of the men who had been arrested for various offenses, such as theft, desertion, repeated

^b Based on The Work of Psychiatrists in Military Camps, by Maj. E. Stanley Abbott, M. C. *American Journal of Insanity* 1919, lxxv, No. 4, 457.

absence without leave, in order to determine their responsibility for their acts, and whether or not they should be brought to trial by court-martial. In one case a man already had been convicted for refusal to be operated on for hernia. Before sentence was passed, however, the question of his mentality was raised, and it was found that he was about 9 years old developmentally. His sentence was not carried out; instead, he was discharged from the Army.

The cases of mental disease arising among the men, such as manic or depressive states, dementia præcox, acute alcoholism, delirium tremens, had to be taken care of and treated until some adequate disposition could be made of them. It fell to the psychiatrist, of course, to exercise the care of these, as well as of the cases sent for observation or special examination. The psychiatrist had to determine whether the patient should be allowed to go home or should be sent to an institution for the care of the insane; also, whether he should be allowed to go home alone or must be accompanied by one or more persons. And if the patient was sent to a hospital, the psychiatrist prepared and sent adequate records of the case.

BASE HOSPITAL, CAMP DEVENS, MASS.*

The neuropsychiatric service was opened December 4, 1917, for the reception of patients. During the time draft men were being received, this service did all the camp neuropsychiatric work in addition to attending to the ward cases.

The class of patients handled by this service included neurological, psychiatric, feeble-minded, epileptic, and inebriate, and after the return of the overseas men, so-called "shell-shock," and various traumatic neurological cases. Among the psychiatric cases, dementia præcox, manic-depressive, general paralysis of the insane, and various other forms of psychiatric cases were under observation and treatment.

The treatments as administered, consisted of medicinal therapy, hydrotherapy, electrotherapy, and occupational therapy.

The disposition of the cases was variable; some, not in line of duty, were transferred to the psychopathic hospital, Boston, Mass., and from there to the State in which the patient resided. Other patients, whose disability was incurred in line of duty, were transferred to general hospitals for the insane. Some cases were discharged to duty, either well or improved, and the remaining psychopathic or neuropathic cases were discharged on surgeon's certificate of disability.

The routine of the staff was as follows: There was a daily morning staff meeting on each case, at which time the diagnosis was made. As the occasions demanded, consultations were held in the medical and surgical wards of the hospital. The enlisted personnel were practically intact from the time of the establishment of the ward, most of the men being experienced in the handling of psychopathic cases.

The total number of admissions during 1918 was 929.

* Based on History of Base Hospital, Camp Devens, Mass., by Maj. W. B. Lancaster, M. C., March 19, 1919. On file, Historical Division, S. G. O.

BASE HOSPITAL, CAMP WADSWORTH, S. C.^d

The neuropsychiatric work at Camp Wadsworth was begun during the latter part of September, 1917. At first it consisted in the examination of the camp personnel. A number of organizations of the 27th Division had been examined before coming to Camp Wadsworth. The examination of the remainder was completed during January. Scattered cases and men especially referred by the regimental surgeons were gone over in February. Additional troops began to arrive during March and April, therefore, the number of examinations increased.

It was not until February 15, 1918, that all neurological cases in the base hospital were concentrated in one ward, ward No. 15. This was a regular ward and, therefore, not suitable for the care of insane patients. From the opening of the hospital psychiatric patients were transferred as soon as possible to special institutions; at first to Kings County Hospital, Brooklyn, N. Y., and St. Elizabeths Hospital, Washington, D. C., after December, 1917, to General Hospital No. 6, Fort McPherson, Ga. A special psychiatric ward was constructed and completely equipped.

Ward No. 15 contained 36 beds, most of which were constantly occupied. The majority of cases treated were psychoneurotic. Hysteria was especially frequent. Patients with this trouble responded well to suggestive therapy administered through the medium of faradic and sinusoidal electricity. Neurasthenic patients did well under rest, forced feeding, massage and salt rubs. Special attention was paid continually to the mental attitude of the patients. Cheerfulness was the rule in the ward. Sympathy and understanding, combined with firmness, were maintained. Faulty attitudes and emotional reactions were explained to the patients and they were encouraged to combat them. They were made to realize that a personal interest was taken in their welfare, that things were done for them, and that much was expected from them in return.

BASE HOSPITAL, CAMP MEADE, MD.^e

The personnel of the neuropsychiatric section consisted of 1 officer and 12 enlisted men. Of the enlisted men, 3 were male graduate nurses, 5 men with previous experience in State hospitals for the insane, and 4 orderlies. On February 1, 1918, one ward was assigned for neurological and psychiatric cases. On March 15, one-half of another ward was assigned to this service, and on April 22 the number of cases had increased to such an extent that it was necessary to assign two full wards to this service. Of these wards, one was used for psychiatric, the other for neurological cases. On December 18, it was found again unnecessary to have two wards, owing to the decreased population of the camp, and all cases were concentrated in one ward.

The following tabulation shows the movement of patients on this service for the year:

^d Based on History of Base Hospital, Camp Wadsworth, S. C., by Maj. W. Barndollar, M. C., undated. On file, Historical Division, S. G. O.

^e Based on annual report, base hospital, Camp Meade, Md., for 1918, made to the Surgeon General by the commanding officer. On file, Historical Division, S. G. O.

Total admissions.....	952
Average under treatment daily.....	51
Discharged:	
Improved.....	166
Recovered.....	65
Unimproved.....	630
By transfer.....	65
Died.....	5
Remaining Dec. 31, 1918.....	21

The percentage of various classifications of diseases resulting in discharge from the service follows:

	Per cent
Nervous disease or injury.....	24
Psychoneurosis.....	20
Psychosis.....	10
Inebriety.....	9
Constitutional psychopathic state.....	8

It would seem at first glance that the percentage recommended for discharge was high; however, it is evident that once a diagnosis of nervous or mental disease was made it was to the best interests of the service, as well as of the individual, to return him to his home, experience having shown that such men would not stand up under the stress of modern warfare.

Because of limited space, necessitating the expeditious handling of patients, the insane were transferred to the Government Hospital for the Insane, Washington, D. C., for further observation and treatment. Mildly demented cases which observation showed were not dangerous to themselves, or a menace to society, were sent to their homes in care of an attendant.

Of the 952 patients admitted, 80 per cent were admitted from command and 20 per cent transferred from other wards of the hospital. There were no suicides or other serious injuries during the year. From each incoming draft were admitted about 10 cases of drug addiction. These men were immediately discharged from the service, experience having shown that no reliance could be placed on a man so afflicted, and his presence in a company was decidedly detrimental to the morale. It is interesting to note the high percentage of cases of hyperthyroidism from the mountainous districts of adjacent States, especially West Virginia. There were surprisingly few cases of attempted malingering. The exceptionally low percentage of involvement of the central nervous system in syphilis in the negroes is also worthy of mention.

BASE HOSPITAL, CAMP JACKSON, S. C.¹

The neuropsychiatric ward was opened in November, 1917. This building was designed and equipped on the lines of the standard base hospital ward for this special purpose. According to the original plans, heavy iron bars on the windows were called for, but were omitted by the War Department upon the request of the chief of the service, it being his belief that such measures for the restraint of patients were antiquated.

¹ Based on History of Base Hospital, Camp Jackson, S. C., from October 22, 1917, to June 1, 1918, by Capt. Martin W. Reidan, M. C. On file, Record Room, S. G. O., 314.7 (Medical History, Camp Jackson) (1).

The psychiatric portion of the ward was not available for its proper purpose until March, 1918, because the whole building was commandeered for the care of meningitis cases during the severe epidemic of 1917-18.

The growth of the service is shown by the following table for the first four months of 1918, which presents, however, only patients in the neuropsychiatric ward and does not include cases seen in consultation:

	January	February	March	April
Number of patients 1st day of month.....	8	18	14	27
Admissions.....	21	17	42	48
Total number under treatment.....	29	35	56	75
Daily average.....	14	17	25	27
Total number discharged.....	11	21	29	48

This department performed two distinct functions: First, as a clearing house through which soldiers who were accepted for service could be passed in order to ascertain their fitness for service or responsibility for misconduct, and, second, as a place where the insane or neurologically afflicted might be helped, cared for, and treated until their discharge papers were complete or the type of service for which they were qualified could be determined. With the return to the special ward it became easy to classify the different groups and to begin such a systematic ordering of work and recreation and rest as to show a distinctly remediable effect upon many cases. The patients were kept occupied at work or games as much as possible.

The insane patients were required to do simple tasks when their condition permitted. The camisole or other restraint, mechanical or medicinal, was rarely resorted to; usually enough attendants were available to care for such cases.

A classification of the various cases follows:

Psychoneurosis.....	103	Cerebral hemorrhage.....	3
Mental deficiency.....	68	Manic-depressive psychosis.....	19
Epilepsy.....	45	Dementia præcox.....	9
Tertiary syphilis, cerebrospinal.....	12	General paralysis of the insane.....	1
Peripheral nerve lesions.....	8	Conscientious objector.....	1
Morphine habit.....	9	Constitutional psychopathic state.....	5
Hyperthyroidism.....	4		

The neurasthenias and psychasthenias were almost without exception of long standing, and their detection before acceptance would have saved the Government a large sum of money.

The determination of intellectual level in cases of mental deficiency presented great difficulties because of the remarkable degree of illiteracy in the troops, especially the negroes. To apply to these cases any arbitrary method of examination applicable to communities which were literate would have given results almost grotesque. The Yerkes-Bridges point scale, modified by leaving out the questions demanding literacy and adding, to the total of points thus secured, an average credit for these questions which had been elided gave good results. The sense of relative degrees of wrongdoing was very limited, indeed, and it was often a question for deep and ponderous mental debate with them

whether it were worse to kill a man or to curse. Most whites measuring below 8 years were, as a rule, poor specimens physically as well as mentally and morally. On the contrary, amongst the negroes a great many who measured imbeciles were excellent workers. These were held for limited service.

The experience with drug addicts was interesting. With very few exceptions all of these men had taken "cures" from one to five times. All, upon discharge, were in much improved condition. There was little doubt that each one resumed the use of his drug soon after return to civil life. These men were unanimous in the belief that the Harrison Act had merely increased the price of narcotics and that any addict could readily secure the "dope," usually by means of doctors' prescriptions; less often by the various underground paths worn smooth by the "dope fiend's" shuffling steps.

The fact that there was only one case of general paralysis of the insane was noteworthy.

BASE HOSPITAL, CAMP GRANT, ILL.*

The department of neurology and psychiatry was established September 1, 1917. The work of the department consisted of two fairly distinct divisions: (1) Examining of recruits for nervous and mental disease. For this work examiners attached to the camp, as well as those in the base hospital, were used. One examiner worked with each general examining board at the time of the initial examinations. Cases considered suspects were sent to another examiner who, with a psychologist, acted as a final deciding board. In examining the last 15,000 recruits it was found that this plan was more satisfactory than the old method of examining only referred cases or the method of making the psychiatric examination after the general examination was completed. (2) Care of patients requiring hospital treatment and examination of referred cases. Only such patients were kept in the psychopathic ward as required treatment or needed more supervision while awaiting discharge than could be given them in their companies. The new form of certificate of disability materially shortened the stay in the hospital of these cases. Referred cases came from a number of sources, usually from the regimental surgeon but often originally from the company officers on account of inaptitude or peculiarities; cases of misconduct referred for examination preliminary to trial; as a result of letters written by relatives or friends; and hospital cases referred on account of some neurological or mental condition developing or being first observed while under treatment for some physical ailment.

A considerable number of conscientious objectors were examined. They were classified as religious, intellectual, and the objector whose scruples were only means to the end of getting out of a situation that was distasteful to him. It was exceedingly difficult to separate the latter from the two former groups. Objectors were classified also as to their mental make-up. The majority were found to be normal both as regards disease and defect, but a certain per cent were psychotic. The mentally abnormal were very seldom feeble-minded. They were usually either hypomanics or paranoid præcoxes, especially the latter.

* Based on History of Base Hospital, Camp Grant, Ill., by Lieut. Col. H. C. Michie, M. C. On file, Historical Division, S. O. O.

Of the psychoses, dementia præcox of the hebephrenic type was by far the most frequently encountered. Old præcoxes were especially liable to "blow up" in a military environment and were frequently minor offenders. Syphilitic psychoses were the next most frequent. Of the organic nervous diseases the only one of any great importance, aside from cerebrospinal lues, was epilepsy.

Establishing a diagnosis of epilepsy was not always an easy matter, differentiation from hysteria often was difficult, and many cases were seen in which there was an isolated fit at the beginning of an acute infection or following typhoid inoculation.

Functional nervous diseases were rather frequent—hysteria among the negroes and lower grade of white soldiers, and neurasthenia among the better grade of whites. The custom was to recommend men with functional nervous disease for domestic service and not for discharge from the Army, except in the more advanced and disabling cases.

The diseases, then, that were especially to be dealt with were dementia præcox, cerebrospinal lues, epilepsy, and psychoneuroses.

From September 1, 1917, to April 30, 1918, 319 men were recommended for discharge by this department. The above plan worked very well for several months until the camp had increased largely in population so that the number of men who required examination on account of nervous or mental diseases, but who did not require admission to the hospital, became so large as to interfere materially with the work of the psychopathic ward itself. Early in July, 1918, the division psychiatrist moved his offices to a building in the camp away from the base hospital, and the psychopathic ward was used only for patients requiring admission. Nervous and mental cases which did not seem to be serious enough to require admission to the psychopathic ward for care or treatment were sent first by their regimental officers to a psychiatric examiner stationed at one of the buildings in a part of the camp more easily accessible to ambulatory cases than was the base hospital.

GENERAL HOSPITAL NO. 1, NEW YORK CITY ^a

On November 22, 1918, ward 55 of General Hospital No. 1 was opened for the reception of neuropsychiatric patients arriving at the port of embarkation, Hoboken, N. J., from overseas and also for such cases as developed in the hospitals under the jurisdiction of this port. This had formerly been the Messiah Home, maintained for the care of children. The general construction was so good that with but a few alterations it was readily adapted for the class of patients with which we had to deal.

The building contained five wards, two of which were devoted to the frank psychoses, one for disturbed patients and the other for quiet, depressed ones. The remaining wards were used for the care of mild mental states, psychoneurotics, epileptics, constitutional psychopaths, etc. The hospital had a total bed capacity of 220. Of this number the ward for disturbed patients contained 30 beds, the ward for quiet patients 40 beds, and the remaining 3 wards contained 50 beds each.

^a Based on Report of General Hospital No. 1, Williamsbridge, N. Y., made by Lieut. Col. P. W. Gibson, M. C., October 18, 1919. On file, Historical Division, S. O. O.

The staff consisted of an executive medical officer, chief of service, five ward surgeons, a mess officer, a registrar, and a dental officer. As this part of the general hospital functioned as an evacuation unit, urgent conditions only could be treated, but detailed reports were made of all pathologic findings, and recommendations for treatment were written thereon. These reports were then forwarded, with the history of the patient, to his final destination. In view of the fact that the unit was an integral part of General Hospital No. 1, it was possible to arrange for consultation with the members of this staff, and their services were always promptly available. As a result of such an arrangement, many patients actually ill with conditions other than mental could be immediately transferred for treatment. The hospital was equipped with a complete hydrotherapeutic outfit, consisting of continuous baths, showers, needle spray, douche, etc. An occupation class under the direction of a trained worker and three assistants completed the therapeutic system.

On admission all patients immediately were inspected for louse infestation, venereal diseases and throat infections. Throat cultures were taken on all admissions. Following this procedure, a hot shower was given to all but louse-infested patients, who were given a special tub bath. The clothing of all patients was sterilized by steam.

As soon as possible after admission a complete physical and mental examination was made. The cases were classified and reported to the office of the surgeon, Hoboken, N. J., in order that transportation might be arranged. If the diagnosis on the field card accompanying the patient was not concurred in, the patient was presented at a staff meeting, and the consensus of opinion determined the diagnosis. In all doubtful cases, blood and spinal fluid examinations were made. In addition, ophthalmic, aural, surgical, and medical examinations were made where there were special indications. Where a diagnosis of mental deficiency was in doubt, an intelligence test by means of the Stanford revision was made, and in many cases the diagnosis was changed. This cast no reflection on the work of the psychiatrists overseas, as many of these patients presented a far different aspect after reaching this country. The psychoses patients, too, often presented a far different appearance from that previously noted in their records, and although formerly indifferent and depressed, now presented a cheerful, interested aspect. The total number of patients admitted was 2,750, of which 2,126 were overseas and 624 were local cases.

The patients admitted to the hospital were classified as follows:

Classification of patients with organic nervous diseases

Amyotrophic lateral sclerosis.....	1
Sydenham's chorea.....	1
Acute encephalitis.....	1
Lateral sclerosis.....	2
Tabes dorsalis.....	4
Multiple neuritis (following typhoid fever, 1; diphtheria, 2; intravenous administration of arsphenamine, 1; alcohol, 4).....	8
Cerebral syphilis.....	33
Peripheral nerve injury.....	9

Gunshot wound of the head.....	2
Head injury without demonstrable fracture of the skull.....	7
General paresis.....	61
Fraetured skull.....	7
Brain tumor.....	3
Progressive muscular atrophy.....	1
Myotonia congenita.....	1
Transverse myelitis following intratracheal administration of arsphen- amine.....	1
Nervous disease undiagnosed.....	2
Total.....	144

It will be seen from the above that 100 of the 144 organic nervous cases were syphilitic diseases of the central nervous system.

The cases classified as "Observation for epilepsy" presented no evidence in the accompanying history that a convulsion had ever been observed by a medical officer, and as none occurred at this hospital it was deemed fair to the patient to leave the diagnosis open.

Cases of epilepsy and observation for epilepsy

Observation for epilepsy.....	25	Traumatic.....	2
Grand mal.....	111	Psychosis.....	2
Petit mal.....	9		
Equivalents.....	1	Total.....	151
Jacksonian.....	1		

The patients listed under the heading "Recovered" had usually had either a mild depression or excitement of the manic-depressive type, or else had had an acute alcoholic hallucinosis from which they had completely recovered. A number of psychoneurotics appeared to have recovered, in that they were free from symptoms during their residence and so were placed in this group because it was felt that further hospital residence was unwise and might produce a recurrence of their symptoms.

Of the recovered cases the subclassifications were as follows:

Classification of recovered cases

Psychoneurosis.....	17	Psychosis following influenza (infective exhaustive).....	3
Alcoholic hallucinosis, acute.....	7	Undifferentiated depression.....	2
Manic-depressive psychosis.....	9	Gunshot wound of the spinal cord.....	1
Psychosis undiagnosed.....	1		
Alcoholism, acute.....	1		
Pathologic intoxication.....	1	Recovered.....	43
Delirium tremens.....	1		

Mental deficiency and manic-depressive psychoses

Mental deficiency with psychosis.....	4
Manic-depressive psychoses:	
Manic type.....	95
Depressed type.....	213
Mixed type.....	44
Circular type.....	1
Total.....	353

In the manic-depressive psychoses group, in so far as it was possible to obtain reliable information, 35 had had a previous attack. It must be remembered, however, that the number of patients who had had previous attacks was undoubtedly greater, but as many of the patients were entirely inaccessible, information in regard to this could not be obtained. The depressions predominated.

Cases of dementia praecox

Hebephrenic.....	256
Paranoid.....	163
Simple.....	111
Catatonic.....	20
Total.....	550

Many of the patients presented a typical schizophrenic history, but were in an apparently normal condition and well adjusted. Some of them gave quite adequate explanations for their upset, such as nostalgia and worry over misfortune at home. Others stated that they felt they had been unfairly treated in the Army. The eventual outcome appeared to be problematical. It was felt that the original diagnosis should be left unchanged.

Cases of paranoid condition, alcoholic and traumatic psychoses, constitutional psychopathic state, and psychoneuroses

Paranoid condition.....	4	Psychoneuroses:	
=====		Hysteria.....	295
Psychoses with somatic disease:		Neurasthenia.....	282
Following influenza.....	20	Psychasthenia (compulsion neu-	
Following mumps.....	2	rosis).....	25
Following pneumonia.....	1	Anxiety state.....	22
	23	Hyperthyroidism.....	8
Traumatic psychosis (head injury).....	5	Enuresis.....	8
=====		Disordered action of the heart.....	5
Alcoholic psychoses:		Traumatic neurosis.....	3
Acute hallucinosis.....	37	Stammering.....	6
Deterioration.....	4	Syphilophobia.....	2
Pathologic intoxication.....	1	Hyperthyroidism.....	2
	42	Somnambulism.....	1
=====		Dyspituitarism.....	1
Constitutional psychopathic state:		Facial tic.....	1
Inadequate personality.....	110		
Emotional instability.....	8		
Paranoid personality.....	5		
Delinquent tendencies.....	1		
Homosexuality.....	3		
Criminal tendencies.....	3		
	130		

Of the neurasthenic group 26 per cent of the patients gave a history of having had symptoms of this condition in civilian life, and of the hysteria group 19 per cent gave a history of similar trouble prior to Army service.

Cases of inebriety

Alcoholism.....	111
Morphine addiction.....	7
Heroine addiction.....	6
Heroine and morphine addiction.....	1
Total.....	125

The small number of drug addictions is notable.

Cases of mental deficiency, without mental disease and undiagnosed

Mental deficiency:		No mental disease found—Contd.	
Morons.....	225	Deviated nasal septum.....	1
Imbeciles.....	27	Diphtheria carrier.....	2
	<u>252</u>	Malaria, tertian.....	1
		Polyarthritis, rheumatic.....	1
No mental disease found:		Gunshot wound of the right arm..	1
Rheumatic fever, subacute.....	1	Valvular heart disease.....	1
Flat-foot.....	1	Diagnosed as epilepsy but not con-	
Duodenal ulcer.....	1	curred in.....	1
Pulmonary tuberculosis.....	3	No physical or mental disease	
Syphilitic cirrhosis of the liver....	1	found.....	13
Gastritis, chronic catarrhal.....	1		<u>31</u>
Syphilis, secondary.....	1	Psychoses undiagnosed.....	148
Acute gonorrhea.....	1		

The cases with psychoses undiagnosed were left ungrouped because of the lack of data sufficient to make a differentiation possible. Many of these patients were fearful and refused to answer questions. They were not cata-tonic nor did they attitudinize. Hallucinatory reactions were not observed. Other patients appeared quite confused and presented a dreamlike, perplexed state. At times they appeared quite distressed. They refused to cooperate on examination. Many of the patients were difficult to differentiate adequately, and it could not be definitely decided as to whether they presented a præcox or manic-depressive reaction. In many cases there was an alcoholic history and coloring which was difficult to evaluate properly. In a few of the cases there were pupillary signs, but the residence was too short to permit of blood and spinal fluid examinations, or else they were too disturbed for such procedures.

This part of the United States Army General Hospital No. 1 closed officially on September 10, 1919, but no patients were received after September 1, 1919, so that it was open for the reception of patients for a period of 9 months and 22 days.

None of the cases appeared different from those encountered in civilian life, except that most of them had a military coloring. Of the total number of 2,750 patients, 24 per cent were psychoneurotics, 20 per cent of the dementia

præcox type, 12 per cent were of the manic-depressive group, 10 per cent mental defectives, 5 per cent had organic nervous diseases, principally of the syphilitic type, 4 per cent were definitely epileptic, and 4 per cent were constitutional psychopaths. There were only 14 cases of drug addiction, or about 0.5 per cent of the total admissions. Many of the cases apparently of the præcox type appeared to be recovered, with excellent insight. Of the neurasthenic group, 26 per cent of the patients gave a history of having had symptoms in civilian life, and of the hysteria group 19 per cent gave a history of similar trouble prior to Army service.

A comparison of the group percentages found at this hospital, with the group percentages of the total male admissions for the New York State hospital service during the year 1919, is interesting. During this year the total first admissions were 6,791. Of this number, 3,527 were men. The group percentages for the male admissions are as follows:

Classification of men admitted to the New York State hospitals during 1919

	Per cent	Number of cases		Per cent	Number of cases
Traumatic psychoses.....	0.5	18	Manic-depressive psychoses.....	9.0	352
Senile psychoses.....	9.0	324	Involution melancholia.....	1.5	56
Cerebral arteriosclerosis.....	6.0	236	Dementia præcox.....	27.0	1,061
General paresis.....	20.0	710	Paranoia.....	1.5	59
Cerebral syphilis.....	.4	15	Epileptic psychoses.....	2.7	96
Organic brain diseases (Huntington's chorea, brain tumor, etc.).....	.5	19	Psychoneuroses.....	1.0	35
Alcoholic psychoses.....	5.0	204	Constitutional psychopathic state.....	1.6	66
Drug psychoses.....	.16	6	Psychoses with mental deficiency.....	2.5	88
Psychoses with somatic disease.....	2.0	76	Psychoses undiagnosed.....	3.9	138
			Not insane.....	.7	28

While a strict comparison is not possible, it is interesting to know that there is a close ratio between the percentage of cases of dementia præcox, namely, 20 per cent in the Army and 27 per cent in civilian life, and between the percentage of cases of manic-depressive diseases, 12 per cent in the Army and 9 per cent in civilian life. Dementia præcox in both instances forms the largest group of the psychoses. Comparisons between the other groups is impossible because the civilian State hospitals deal primarily with psychoses occurring at all ages and with unselected population. In 1918, of the total remaining population in the New York State hospitals, 59 per cent were of the dementia præcox group. It will readily be seen, therefore, that our great problem, from the standpoint of psychoses, both civilian and military, was that of the dementia præcox group.

All the acute psychoses among the officer patients received at Hoboken requiring close supervision were transferred to the Bloomingdale Hospital, White Plains, N. Y., where the Government reserved a limited number of beds. An Army medical officer was stationed at Bloomingdale most of the time, and in addition, a psychiatrist from United States Army General Hospital No. 1 visited the hospital two or three times a week and supervised the treatment and disposition of the officer patients.

The mild and recovered psychoses and psychoneuroses among officers and some organic nervous cases were excellently handled at the private pavilion.

This place afforded not only very desirable private rooming facilities, with pleasant environment, but also a most up-to-date hydrotherapeutic plant. The treatment of these officer patients consisted in general of hygienic measures, medicinal treatment, special medical and surgical treatment, psychotherapy, and hydrotherapy.

As in other hospitals, the importance of the neuropsychiatric department in United States Army General Hospital No. 1 became evident in the summer of 1918, when there were numerous consultations required by other departments in looking over doubtful cases in other medical services.

The following tabulation of nervous and mental cases treated at the United States Army General Hospital No. 1 (exclusive of the Messiah Home), between July 1, 1918, and June 30, 1919, shows diagnosis and disposition.

	Returned to duty		Left hospital		Discharged on surgeon's certificate of disability, enlisted men	Discharged per Circulars Nos. 73, 75, 124 and 188, War Department, 1918, officers	Discharged per order Adjutant General's Office, officers	Discharged to custody of relative		Discharged to War Risk Insurance, officers	Transferred to other hospital		Died		Re-maining or on leave		Total		Grand total
	Officers	Enlisted men	Officers	Enlisted men				Officers	Enlisted men		Officers	Enlisted men	Officers	Enlisted men	Officers	Enlisted men	Officers	Enlisted men	
Psychoneurosis.....	13	56	1	68	80	4		4		30	271	1		10	15	139	414	553	
Epilepsy.....		5	1	68	1					1	21			1		3	95	98	
Mental deficiency.....		2	3	96							38				7		146	146	
Constitutional psychopathic states.....	2	3	1	65	6	2					22					11	72	83	
Manic-depressive psychoses.....	3	2		20	39	1	4			10	77	1	19	2	76	102	178		
Dementia præcox.....		2	1			1			1	6	115		6	3	14	121	135		
Paranoid states.....					2	1				2					5		5		
Paresis.....						1				3	11	1	1		5	12	17		
Infective exhaustive psychoses.....				5	4	1							1	4	6	11	17		
Psychoses (undiagnosed).....		4									2								
Organic nervous diseases.....											3		1	2		2	8	10	
Chronic alcoholism.....	4				5					3	2			2		14	2	16	
Others.....	2			12	2		1				4		1	1		6	16	22	
Total.....	29	74	2	5	326	144	12	5	4	1	55	567	1	4	44	31	293	1,011	1,304

GENERAL HOSPITAL NO. 2,¹ FORT McHENRY, MD.

The neuropsychiatric service at this hospital was opened in March, 1918, but adequate facilities were lacking and it was not until May that the patients were moved into the new standard psychiatric building and the real, effective work of the service was begun. Patients were given every benefit of the modern school of neuropsychiatry. The interior of the building was decorated and painted in soft, restful colors, while potted plants and flowers distributed throughout and lace curtains at the windows all combined to make the place as attractive, homelike, and pleasant as possible. In the rear a spacious porch was converted into a sun parlor and made an ideal place for the activities of occupational therapy.

¹ Based on History of General Hospital No. 2, Fort McHenry, Md., by Maj. A. P. Herring, M. C. On file, Historical Division, S. G. O.

The psychiatric building had its own hydrotherapy room equipped with showers, continuous tub, etc., and the soothing effect of the sedative bath, especially in manic cases, was successfully demonstrated. Full advantage was taken of the hospital's physiotherapy department and nearly all of the neuropsychiatric patients were sent out daily for some kind of treatment in the more elaborately equipped psychiatric building.

No effort was spared to provide every therapeutic benefit to be derived from diversional occupation and recreation for the patients. A reconstruction aide spent her time entirely with these patients, doing all that was possible to keep their minds and hands busy, and splendid results were achieved. In addition, a teacher of calisthenics spent some time each day giving the patients brisk exercises and lively games which were greatly enjoyed. A large pool table, a Victrola, and a well-stocked library were available for use at all times.

The patients were treated individually and not collectively. No routine or "system" methods were used in administering to those who were admitted complaining of the many and varied symptoms incident to a nervous or mental disorder.

The happy results attending the use of the principal agencies of treatment (hydrotherapy, occupational therapy, psychotherapy), especially in the large group of the functional neuroses and the incipient mental disorders, amply justified the principles of "nonrestraint" which were insisted upon when the department was inaugurated, early in 1918.

The neuropsychiatric wards in this hospital were built along the plans of those existing in all of the Army general hospitals at that time. There were no locked doors, barred or screened windows. Patients admitted to the department of neuropsychiatry were always treated as sick individuals. On March 22, 1919, the scope of the service was considerably broadened by making arrangements to care for a number of neuropsychiatric officer patients, and a ward was set aside for their use. In addition to this the Surgeon General gave this service general supervision over a number of neuropsychiatric cases among Army nurses, aides, and others who were sent to the Shepherd and Enoch Pratt Hospital at Towson, Md., and to Henry Phipps psychiatric clinic at Johns Hopkins Hospital.

The following is a brief statistical summary of the department:

Number of patients admitted during the year 1918.....	231
Number of patients admitted during the year 1919.....	388
Number of patients admitted from January 1 to April 31, 1920.....	60
Total number admitted.....	679
Number of patients discharged by surgeon's certificate of disability.....	144
Number of patients discharged to duty.....	120
Number of patients transferred.....	403
Number of patients deserted.....	8
Number of patients died.....	4
Total number disposed of.....	679

Diagnoses:	
Nervous disease and injury.....	175
Psychoneurosis.....	129
Psychoses.....	170
Inebriety.....	21
Mental deficiency.....	79
Constitutional psychopathic state.....	86
Other diseases and injuries.....	19
Total.....	679
Consultations.....	345

GENERAL HOSPITAL NO. 6, FORT McPHERSON, GA.ⁱ

The first collecting wards in the United States to be especially built and equipped for the neuropsychiatric work of the Army were opened to receive patients at Fort McPherson on November 7, 1917. In the suburbs of Atlanta United States Army General Hospital No. 6 was centrally located with regard to a great military population, including many cantonments and all the forts along the southeastern coast. Its grounds contained many medical units preparing for foreign service. Near by, with through train connections, were Camps Greenleaf, McClellan, Sheridan, Wheeler, and Hancock. The main line north tapped Camps Sevier, Wadsworth, and Greene.

The neuropsychiatric wards were so placed that the reception and treatment sections had on three sides medical and surgical wards, while the three buildings for nervous and insane cases stretched out toward the woods and away from other structures. Diet kitchens and offices were in the proximal ends of the three buildings for mental diseases and porches made them easily accessible from the general mess hall and from each other.

All buildings were new and conformed in appearance to other new hospital structures. They were sunny, well ventilated, with ample porch space, which was screened. The door of the reception section opened into a large room furnished with center table and settees. This was a meeting place for all the activities of the service. On one side was the record room and on the other the physician's office, housing a collection of books on neuropsychiatry, mental hygiene, and military service furnished by the National Committee for Mental Hygiene. Opposite the door were three smaller rooms. The first was for mental examinations, fitted with a table and shelves on which were kept the psychological tests and record blanks. The second contained a high bed for physical examinations and a blood-pressure instrument, an ophthalmoscope, and other clinical apparatus. The third room was fitted as a ward laboratory, with apparatus chiefly for urinalysis and the collecting and examining of blood and spinal fluid.

Entering the treatment section by a narrow hall from the reception room, one found in a room on the right electrical apparatus with a high convenient table for a recumbent patient. Across the hall on a cement floor were high tables for massage and packs. In front, in a room of many windows, open on

ⁱ Based on History of General Hospital No. 6, Fort McPherson, Ga., by Col. Thomas S. Bratton, M. C. On file, Historical Division, S. O. O.

three sides, with cement floor sloping 3 inches to a central drain, were placed an elaborate combination douche apparatus controlled from the wall and an electric light cabinet bath. In a separate room a Bergonie machine was set up.

Special articles of therapeutic and diagnostic equipment were furnished by the National Committee for Mental Hygiene as soon as the buildings were under construction and, because of this generosity and foresight, were at once ready for use.

A building adjoining, with small dormitories well separated from each other, was used as an admission ward. At its far end was a large space fitted with continuous bathtubs and showers, with inclosed porch in connection.

Two other buildings radiated from a common center with this last building. They were arranged to give isolation with a separate porch and bath to varying groups of patients.

The chief of neuropsychiatric wards, by consent of the chief of medical service, reported directly to the commanding officer in exclusively neuropsychiatric matters. Assistant physicians had duties roughly coordinate and independent. One devoted all his time to teaching enlisted men and to carrying out meningitis therapy in the medical wards. Another physician had charge of physiotherapy, treating patients from all hospital services. He gave instruction in his particular field to enlisted men, who assisted him in turn. The third was a specialist in the use of the Bergonie electrical apparatus, demonstrating its use in selected cases. Other physicians had direct charge of the wards.

Each ward for the insane was in charge of a nurse or wardmaster who had adequate psychiatric training; a supervising nurse had general duties in the care of all cases. The neurological ward was in the charge of nurses with general training; it was open, and run as were other medical wards.

A sergeant was in charge of occupational activities, being responsible for patients received from the wards for outside work. There was opportunity also to use the occupational classes of the reconstruction department.

A sergeant, first class, was in charge of all enlisted men sent here for training, assigning them to duty and keeping track of their work and character; he also had charge of records, with three clerks to help him.

Enlisted men were supplied by the section of neurology and psychiatry of the Surgeon General's Office, which selected them because of special experience or fitness. Among them were many attendants with more or less service in hospitals for the insane and many college men who had specialized in psychology or pharmacy. Due to a shortage in experienced personnel, it was necessary to take Hospital Corps men and men without hospital experience and train them for work on the mental wards. A special course was instituted and lectures were given by the ward physicians on the care and treatment of mental diseases.

During the fall and winter (1917-18) the wards were crowded with dementia præcox cases, most of them of long standing. In some cases the conditions of Army life seemed to precipitate mental trouble in persons who might have remained normal in civil life. Many were returned to their homes for supervision. Over 50 were returned to hospitals in their home States, often to hospitals where they were well known as former patients.

As a contrast to this group was one formed by patients from Camp Gordon, Ga., and the other wards of the general hospital, who complained of headaches, vertigo, pains. Many of these were carried as consultation cases; those not rather promptly relieved by the fitting of glasses, the cleaning of teeth, by baths and packs, were found, in general, resistant to treatment, and, under the diagnosis of neurasthenia or constitutional psychopathic state, usually were discharged.

With the spring came a third general group—the organic-appearing cases, which turned out to be functional, and the acute psychoses. Electrical apparatus, added to suggestion, made many dumb to talk and many crippled to walk. The diagnosing of different sorts of fits was a difficult problem. The malingerer was rare. Cases of feeble-mindedness were few because they had been sifted out in the cantonments.

In treatment physiotherapy was used largely and with good results. Gardening developed nicely in adjoining spaces and provided many mental cases with pleasure and exercise. It was the aim to give most of the patients employment of some kind. During the spring, summer, and fall months, many patients worked on the lawn, grading, seeding, planting, and caring for flowers. Others worked in the vegetable garden. On the wards patients were employed under the supervision of occupational therapists and instructed in basketry, rug weaving, beadwork, hammock making, wood carving, etc. A great deal of interest was manifested in the work and much benefit was derived from it.

The neuropsychiatric section of the hospital contained, on January 1, 1918, 30 patients, and on December 31, 1918, there were 153 patients. During the year there were 817 admissions. The largest number of patients admitted in any one month was during October, when 174 cases were received. The average monthly admission was 68 patients. Up to October (1918) it had been possible to care for and treat all mental and nervous cases in the buildings designated and built for this class, namely, wards U, V-1, V-2, and V-3. In October, however, it became necessary to convert medical wards M and L into psychiatric wards. These gave an additional capacity of 160 beds, making the total capacity of the neuropsychiatric wards 276.

About 45 of the admissions to the neuropsychiatric section were psychotic cases. Many of these cases in the early part of the year came from the various camps, but the majority came from overseas. About 25 per cent of the cases admitted were functional neuroses, mostly from overseas; about 10 per cent were mental defectives. Comparatively few organic nervous cases were received. Constitutional psychopathic states represented 6 per cent of the mental cases admitted. This class seemingly found it difficult to adjust to Army life for any length of time, soon ran counter to the necessary discipline, and were a source of disturbance and trouble. Only a few drug addicts and epileptics were received.

During the year 692 cases were discharged in various ways. Three hundred and seventy-nine cases were discharged as recovered or improved; 125 cases were transferred to Government hospitals for the insane; 116 cases were discharged to other public and private hospitals. The death rate was comparatively low, 5 cases in all, or less than 1 per cent of admissions.

GENERAL HOSPITAL NO. 26, FORT DES MOINES, IOWA*

At General Hospital No. 26, Fort Des Moines, Iowa, there were two wards for neuropsychiatric cases. These wards were newly built of the standard type—wards C and D. Ward D was occupied first on May 17; ward C on May 28, 1918. By the early fall of 1918 the hospital had approximately 1,300 patients, with about equal numbers of general medical and surgical (chiefly orthopedic) cases, and some 80-odd mental cases. By October the daily average of mental patients had increased to 130.

Patients were received in the neuropsychiatric wards in larger or smaller numbers at a time from Camps Funston, Dodge, Stuart, and Grant, from Forts Bliss and Omaha, and McCook Field, and in August and later from the debarkation hospitals at New York, Newport News, and Boston.

Sixteen patients (mental) were discharged by the end of July, but from that time to the middle of October only 20 more were discharged.

The diagnoses were about the same as recorded in the literature for other military hospitals, except that there were not many war neurosis cases—a few epileptics, some manic-depressive cases, some dementia præcox cases, a number of moron and border-line defectives, a few constitutional psychopaths, and an occasional alcoholic or drug addict. A few cases of post-meningitic condition were admitted for observation. When the orthopedic and other surgical cases began to come in from overseas, many nerve-injury cases were seen.

The total number of cases admitted to the mental wards up to December 4 was 226. An equal number were seen in consultation, but not admitted to the wards. In addition to these, a survey was made in August, 1918, of the enlisted personnel, 241 men altogether, of Base Hospital No. 79, which outfitted and organized at Fort Des Moines.

The nursing personnel of the neuropsychiatric wards was adequate in numbers and fair as to quality.

GENERAL HOSPITAL NO. 30, PLATTSBURG, N. Y.¹

Early in 1918 it became evident that more facilities would be required for the observation and treatment of psychoneurotic disorders than could be provided in the neuropsychiatric wards of the general hospitals. These wards, as well as the wards of base hospitals, had been relieved by the establishment of a general hospital for psychoses (General Hospital No. 4, Fort Porter, N. Y.), and patients with psychoneuroses had from time to time been transferred there. It was obvious, however, that this hospital could not be expanded to take care of the large number of psychoneurosis cases that would come under treatment, even if this were desirable, and it was not considered desirable. It was felt that the two types of patients should be separated. For the successful treatment of patients with psychoneuroses in large numbers an organization was required in which could be maintained a spirit of recovery. This meant a hospital to which would be transferred only those patients for whom recovery

* Based on History of General Hospital No. 26, Fort Des Moines, Iowa, by the commanding officer, Nov. 15, 1918. On file, Historical Division, S. G. O.

¹ Based on History of General Hospital No. 30, Plattsburg, N. Y., by the commanding officer. On file, Historical Division, S. G. O.

was reasonably to be expected, and a hospital so located as to be as free as possible from outside distractions, both military and civil, and where military discipline could be maintained or relaxed as the occasion demanded.

The post hospital at Plattsburg Barracks, N. Y., was selected. Medical officers specially trained in neurology and psychiatry were ordered to Plattsburg during May, 1918, and the first neuropsychiatric patient was received May 23, 1918. Ninety-nine patients were transferred to the hospital during June and other patients were transferred during July, August, and September, although the hospital continued during this period as a post hospital and received, in addition to the neuropsychiatric patients, patients from the military organizations then stationed at Plattsburg Barracks and from the second officers' training camp of 3,454 candidates. Some neuropsychiatric patients were received also from overseas. September 21, 1918, the original post hospital at Plattsburg Barracks was designated General Hospital No. 30 and expanded to include the entire group of permanent buildings at this post, the Infantry barracks being converted into hospital wards. There were 28 wards, with a capacity of 1,200 beds.

The hospital was divided for purposes of administration into four sections. Section 1, for medical and surgical cases, including operating room; eye, ear, nose and throat, and genitourinary cases, with X-ray laboratory. Sections 2, 3, and 4, in the Infantry barracks, contained wards for various classes of neuropsychiatric cases. The hospital headquarters offices were moved from the old post hospital to the post administration building in the early part of October, this building being centrally located and more convenient for purposes of administration. Medical officers on duty in the hospital and nurses were assigned to quarters upon the post in buildings set aside for this purpose.

During the months of November and December, various buildings comprising the hospital were connected by inclosed bridges, making in all a compact, protected area for the transfer and care of patients. During this time the porches were inclosed and a steam-heating system was installed throughout.

Although designated as a hospital for war neuroses and primarily for the reception of patients from overseas, patients with other neuropsychiatric conditions, through mistake in diagnosis and the exigencies of the service, were transferred to the hospital or received from overseas. There were later assigned to this hospital, also, at the instance of the division of neurology and psychiatry of the Surgeon General's Office, patients suffering from convulsive disorders (epilepsies) for special study, drug and alcoholic inebriates, and patients with residuals of epidemic cerebrospinal meningitis.

The first 1,000 patients had been received by November 16, 1918. A statistical analysis of this group of 1,000 patients (considered typical for the patients received at this hospital) shows the following clinical distribution and disposition:

OFFICERS

Clinical groups	Total number	Discharged on surgeon's certificate of disability	Returned to duty	Transferred to other hospitals	Still in the hospital	Clinical groups	Total number	Discharged on surgeon's certificate of disability	Returned to duty	Transferred to other hospitals	Still in the hospital
Psychoneuroses:						Constitutional psychopathic states	2	1			1
Hysteria.....	2		1		1	Inebriety; Chronic alcoholism.....	1	1			
Neurasthenia.....	11		10		1	Traumatic conditions: Concussion	1				1
Psychasthenia.....	2		1		1	Miscellaneous groups:					
Other psychoneuroses.....	13	2	4		7	Tic.....	1				1
Epilepsy.....	2	1		1		Epileptiform seizures, isolated.....	2	2			
Psychoses:						All groups.....	44	10	18	3	13
Manic-depressive.....	5	2	2	1							
Other psychoses.....	2	1		1							

ENLISTED MEN—DOMESTIC SERVICE

Psychoneuroses:						Endocrinopathies:					
Hysteria.....	46	29	10	4	3	Hyperthyroidism.....	6	5	1		
Neurasthenia.....	22	10	10	1	1	Other endocrinopathies.....	1		1		
Psychasthenia.....	3	1	2			Inebriety:					
Nostalgia.....	1		1			Acute alcoholism.....	1		1		
Other psychoneuroses.....	8	3	3		2	Chronic alcoholism.....	1	1			
Epilepsy.....	8	5	2	1		Drug addiction.....	5	3	2		
Psychoses:						Traumatic disorders: Cerebral					
Manic-depressive.....	2	1		1		concussion.....	4	1	2	1	
Dementia præcox.....	1	1				Residuals of cerebrospinal meningitis.....	31	1	29		1
With constitutional inferiority.....	10				1	Miscellaneous groups:					
Constitutional psychopathic states	1	8	2			Tic.....	3	2	1		
Mental deficiency.....	8	8	7	1		Enuresis.....	1	1			
Cerebrospinal syphilis:						Somnambulism.....	1		1		
Mesoblastic.....	3		1		2	Weakness following nephrectomy.....	1	1			
Tabes.....	1	1				All groups.....	179	82	77	9	11
Organic nervous disease:											
Sciatica.....	4	1	3								
Multiple neuritis.....	3		3								
Amaurosis (wood alcohol).....	1		1								
Cerebral embolism.....	1										
Facial paralysis.....	1		1								

ENLISTED MEN—OVERSEAS SERVICE

Psychoneuroses:						Endocrinopathies: Hyperthyroidism.....	5	5			
Hysteria.....	150	62	66	1	21	Inebriety:					
Neurasthenia *.....	48	17	15	1	14	Chronic alcoholism.....	3	3			
Psychasthenia.....	5	4	1			Drug addiction.....	1	1			
Other psychoneuroses.....	83	2	67	1	13	Traumatic disorders:					
Epilepsy.....	336	285	4	3	44	Old fracture of skull.....	3	3			
Psychoses:						Cerebral concussion.....	3	1	1		1
Manic-depressive.....	8	1		7		Gunshot injury of cord.....	1			1	
Dementia præcox.....	13	6		2	5	Gunshot injury of left arm.....	1	1			
Paranoid condition.....	1	1				Miscellaneous groups:					
With epilepsy.....	7	1	1	2	3	Enuresis.....	10	3	3		4
With constitutional inferiority.....	3	2			1	Stammering.....	2	2			
With mental deficiency.....	2	1			1	Vasomotor disorder of feet.....	1		1		
Other psychoses.....	5		2	1	2	Hereditary tremor.....	1		1		
Constitutional psychopathic states	23	19	1	1	2	Congenital defect of left chest muscles.....	1	1			1
Mental deficiency.....	20	15	2		3	Cardiac neurosis.....	1				1
Cerebrospinal syphilis:						Acute chorea.....	1				1
Mesoblastic.....	15	5	4	2	4	Pott's disease.....	1				1
General paralysis.....	5	3			2	Observation for nervous disease.....	10		5		5
Organic nervous disease:						All groups.....	777	446	175	25	*130
Multiple neuritis.....	3	1	1		1						
Multiple sclerosis.....	2	1			1						
Brain tumor.....	1			1							
Progressive muscular dystrophy.....	1			1							
Lateral sclerosis.....	1			1							

* 1 case of neurasthenia committed suicide.

<i>Disposition of cases</i>		Per cent
Discharged on surgeon's certificate of disability	-----	53.8
Returned to duty	-----	27.0
Transferred to other hospitals	-----	3.7
Still in the hospital	-----	15.4
Died by suicide	-----	.1

The disposition of cases as shown above is as of January 1, 1919. The cases discharged on surgeon's certificate of disability were practically all not in line of duty, and the same was true of a good many of those transferred to other hospitals or who remained under treatment at Plattsburg. These officers and men were unfit for military service. Their induction into the service was of no benefit either to the Government or to them. It was possible in almost all of them to obtain readily a history of the existence of their disability for a greater or lesser length of time prior to enlistment, and it would have been possible to obtain such a history at the time of induction into the service.

The cases returned to duty had recovered sufficiently from their more acute manifestations to be able to be of some service; but in most of them there remained behind, of course, the neuropathic constitution on the basis of which their nervous breakdown had occurred. They were at best fitted for limited service.

Some contrasts are to be noted in the above tabulations between the respective groups of cases represented in them.

The psychoses constituted 15.9 per cent of all admissions in officers and only 4.5 per cent of all admissions in enlisted men. No significance is probably to be attached to the higher percentage of psychoses among officers, as officers with psychoses were frequently sent to this hospital in preference to a hospital for the insane, while enlisted men were regularly sent to hospitals designated for the treatment of psychoses.

For reasons that are perhaps sufficiently obvious, there were no cases of mental deficiency among officers, and there were also none of cerebrospinal syphilis, although the number of officer patients is too small to be significant. In a larger group of cases a certain percentage of cerebrospinal syphilis would undoubtedly be found, although it seems probable that such percentage would be lower than in enlisted men owing to greater caution about exposure to the infection, more through prophylaxis, and more prompt and thorough treatment in case of infection.

The tabulations show that endocrinopathies—for the most part hyperthyroidism—are more than six times as frequent, relatively, in the home than in the overseas cases. It would seem clear from this that these endocrinopathic cases are so manifestly unfit for military duty that even in the hasty selection of men for overseas service they were almost completely eliminated; those cases which had passed the local board and first cantonment examinations came to light in the course of their training. Thus is explained the fact that endocrinopathies represent 3.9 per cent of all home cases admitted and only 0.6 per cent of all overseas cases.

Residuals of epidemic cerebrospinal meningitis are represented in the home cases by no less than 17.3 per cent of all admissions; in the much larger

number of overseas cases no instance of that condition was observed. The underlying fact is that all epidemic infections and, of course, any sequelæ or residuals, with the possible exception of influenza, were far more prevalent in the home cantonments than among the troops overseas. The reasons for this fact are well known and require no discussion here.

Epilepsy is represented to the extent of only 4.5 per cent of all home cases and no less than 43.2 per cent of overseas cases. This remarkable contrast, as far as it has a bearing on the relative incidence of epilepsy in troops in the home and overseas service, is more apparent than real. The bulk of all cases of epilepsy discovered in home cantonments were disposed of there by discharge on surgeon's certificate of disability. No such disposition could be made of cases discovered in overseas service; they all had to be sent to hospitals in the United States for final disposition. The figures show merely that in examination before local boards at time of mustering in and at time of selection of troops for overseas service epilepsy was often either overlooked or, if known to exist, ignored, and that eventually the necessity arose for these cases to be sent to hospitals and disposed of by discharge on surgeon's certificate of disability.

RESIDUALS OF EPIDEMIC CEREBROSPINAL MENINGITIS

An instructive series of cases studied at Plattsburg were those with residuals of epidemic cerebrospinal meningitis. In the period from December, 1917, to February, 1918, a number of cases of epidemic cerebrospinal meningitis developed at Camp Beauregard, La. The patients were treated with specific serum administered both intravenously and intraspinally, and a number of them made uneventful recoveries from the infection. After a four or five weeks' period of convalescence in the base hospital at the camp, as a rule, they were granted a 60-days' furlough at home. On return from their furlough some of the men were found still to have certain residuals, owing to which they were unable to go back to duty. Others did go back to duty but were found within a few days to be unable to perform it. Therefore all such patients were readmitted to the base hospital. After a further period of from five to eight weeks' treatment and rest in the hospital they were still not in condition to go back to duty, and 18 of them were transferred on July 29 to General Hospital No. 30, Plattsburg Barracks, N. Y.

At various other times and from other camps 13 other post-meningitic patients were received at this hospital, and thus an unusual opportunity presented itself of studying the residuals of epidemic cerebrospinal meningitis.

In the decade previous to 1917 a great deal had been published on the subject of epidemic cerebrospinal meningitis; but these publications dealt almost exclusively with the acute phases of the disease, its bacteriology, modes of transmission, prophylaxis, and specific therapy, and not with the residuals.

The cases that thus came to the attention of the medical officers on duty at General Hospital No. 30 presented a striking and fairly uniform syndrome made up of the following elements, given here in the order of their frequency: (1) Limitation of flexion of the spinal column; (2) undue fatigability; (3) pains in back, legs, and head; (4) tendency toward dizziness and faintness; (5)

muscular weakness; (6) tendency toward blurring of vision, associated with photophobia; (7) impairment of appetite and sleep, associated with a state of undernutrition.

The limitation of flexion of the spinal column was shown in all cases by inability to stoop over far enough to touch the toes with the tips of the fingers without bending the legs at the knees. One or two of our patients, on arriving at the hospital, were able by special effort to come within 6 inches, but most of them could not come within a foot, and one could stoop but very slightly. All said that prior to the attack of meningitis they had been able to do this, and some had been able to stoop far enough to place the palms of the hands on the ground.

The limitation of flexion was further shown in the cervical region by the patients, in the majority of cases, being unable to flex the head on the trunk so as to touch the sternum with the point of the chin—which most people normally can do. Some of the patients could not come within 2 inches of touching.

Undue and unwonted fatigability was present in all cases, although it varied a good deal in degree. In one case, going up a flight of stairs or a short distance up a hill or a few blocks even on level ground resulted in getting out of breath, palpitation, weakness, trembling, aches in the back and legs, and a feeling of exhaustion. In another case the fact of undue fatigability was to be noted only by comparison with former endurance or with the endurance of other men in the organization.

Pains in the back, legs, or head were present in all cases. In some cases it was constant and so severe as to make it impossible to maintain with comfort any position for more than a few minutes. In other cases it was slight or only occasional, or developed only on stooping or exertion. The favorite locations were, in order of frequency, the small of the back, the back of the head and upper part of the neck, the legs behind the knees, and the back between the shoulder blades. In some cases there was tenderness to deep pressure, and in one case the head was so sensitive that laying the hand lightly on the top of it caused an increase of pain. In two cases there was great soreness in the tip of the coccyx, the patients having to sit on either one buttock or the other.

A tendency toward dizziness and faintness was present in almost all the patients, but also varied in degree. In some cases any sudden movement started things whirling or caused black spots to come before the eyes, while severe or prolonged exertion caused the patient to become faint, lose consciousness, and fall; one patient came with a transfer card diagnosis of "epilepsy following meningitis." In the milder cases even severe exertion would bring on only slight or momentary dizziness. Stooping more than other movements would excite this symptom. Arising from bed in the morning would often bring it on. It developed more readily in the unshaded sunlight, especially on a warm day.

In the headaches, dizziness, faintness, and losses of consciousness, and in the fact of these symptoms being especially apt to be brought on by exertion, stooping, sudden movements, or exposure to the sun, the post-meningitic con-

dition closely resembles the well-known condition that persists for years following severe cranial traumatisms.

Muscular weakness, as existing independently of the fatigability and of the pains, was shown particularly by feeble hand grips in more than half of the cases. Usually both grips were weakened, but often in an unequal degree. One patient, in other respects having a rather mild case, formerly as "strong as a tiger," was hardly able to turn the faucets in the lavatory.

The tendency toward blurring of vision was very common but also variable in degree. It became manifest when patients attempted to read, especially if the print was fine. After a few minutes or half an hour the letters would begin to "run together"; if the patient rested a while he could continue the reading, but unless he had rested an hour or more the blurring would come on again and more quickly than the first time.

It would seem that this trouble is due to a weakness of the ocular muscles; in some cases close application would bring on diplopia; the ocular movements, however, as ordinarily tested, as a rule were not impaired. In cases in which the tendency to blurring of vision was most marked there was also a degree of photophobia; at least two of the patients had to wear smoked or colored glasses. In these cases there was sluggishness and limited excursion in the pupillary reaction to light; moreover, on continued exposure to bright light, the initial contraction would soon give way to relaxation; and it may be that the photophobia was dependent at least in part on weakness and fatigability of the concentric muscle fibers of the irides, with resulting lack of shielding of the retina.

The impairment of appetite and sleep, sometimes associated with a state of slight subnutrition, was perhaps a secondary phenomenon. Many of the patients had formerly been leading active outdoor lives but had since been forced by their illness to remain almost wholly without exercise for months. The loss of sleep was almost invariably associated with pain; in some cases the patients had difficulty in getting into a comfortable position for sleep and would toss around for hours before finally falling asleep; others would fall asleep quickly but would wake up in the night on account of pain developing from the strain of being in one position.

The cases showed considerable variation in severity of the symptoms and degree of disablement, as compared one with another, but not in the syndrome considered qualitatively. The quantitative variations seemed to depend in part on severity of the original infection, or possibly the patient's resistance to it, and in part on the length of convalescence. The usual course was characterized by a very pronounced degree of disablement at the beginning of convalescence, progressive improvement for about a month or six weeks under rest without special treatment, and from then on an almost stationary residual condition persisting apparently indefinitely—in the cases at Plattsburg from three months to over a year.

Shortly following the admission of these patients to this hospital, they were divided into groups, according to the degree of disablement, and were placed under a regimen of graded marches, hikes, and exercises, such as neck bending and body bending. This was followed by striking and rapid improve-

ment in some cases and in distinct though slight improvement in almost all within a month.

All cases eventually recovered from the above-described symptoms at least sufficiently to leave the hospital and resume either duty or their civilian occupations. There remained in some of the cases lingering symptoms, such as stiffness in the spine, pains in back, legs, or head; but these were present only in slight degree and were in no way disabling.

In the course of observation of these cases, the impression was occasionally gained of a psychoneurotic element in the form either of exaggerations of the disability or of addition of manifestations foreign to the typical symptom-complex. It was noted that some of the cases showed rather sudden improvement within a few days following the signing of the armistice. The most flagrant case was that of an enlisted man who showed, in addition to the typical post-meningitis symptom-complex, a persistently labored and grotesque gait due to contractures at both knees in a position of partial flexion: "Capt. K. ——— gave me electrical treatment, and after the second treatment I was all cured up."

This is merely added evidence of the well-known fact that a purely functional mental element not infrequently exists as a complicating factor in organic disease.

On the whole the group of post-meningitic residuals presented not only a striking uniformity of symptomatology, but also of course and termination—and that quite regardless of such conditions as prospect of overseas duty, and the signing of the armistice, as may be judged from the fact that of the 31 cases admitted 12 had recovered sufficiently to be recommended for duty prior to November 11; several were among the more recent admissions.

The following case record is cited as typical of the group:

J. F. B., private, headquarters company, 154th Infantry. Born in Arkansas; white, aged 22; single, former occupation, farmer. Admitted to United States Army General Hospital No. 30, Plattsburg Barracks, N. Y., by transfer from base hospital, Camp Beauregard, La., on July 31, 1918. Transfer card diagnosis: Neurosis, post-meningitic.

Family history.—Negative for mental or nervous disease, inebriety, feeble-mindedness, or criminalism, except that one brother died in convulsions in childhood.

Personal history.—Had measles, whooping cough, and mumps in childhood; "swamp fever" (malaria?) at 15; recovered fully from all; no other diseases or injuries. He went to school irregularly, as he had to work and did not have much opportunity; reached fourth grade. Then went to work on his father's farm, receiving \$30 a month and his board. Enlisted June 5, 1917, and was first sent to Fort Logan H. Root, Ark. In September, 1917, was sent to Camp Beauregard, La. He had had no trouble whatever in either place up to the time of onset of his present illness in the latter part of December, 1917. He had drilled and worked well and reported at sick call only twice for minor ailments.

Present illness.—About the 18th of December, 1917, he began having frequent chills, felt weak, and lost appetite; he slept well, however. In the evening of the 20th he developed a very severe headache and "a drawing from the back of the head all the way down"; could not sleep that night. Next morning became unconscious and was taken to the base hospital (Camp Beauregard). Has a vague and incomplete recollection of lumbar punctures. Clinical history from that hospital states that he had epidemic cerebrospinal meningitis, received intraspinal and intravenous treatment, but did not begin to improve until the latter part of February, 1918. Case note, March 1, 1918, states: "Up; very thin and weak." April 11: "Hook-worm treatment given." On April 26 given a furlough. Returned to camp on June

20, but was not able to do duty; felt weak and feverish; occasionally had slight headaches; complained of pains in the back and in the back of the head; would have dizziness on stooping or "on the least strain"; when he tried to read his vision, after a while, would become blurred; he had not regained all the weight he had lost. He was readmitted to the base hospital on June 22; about two weeks later he was sent to the convalescent camp attached to the base hospital. Improved somewhat, but did not fully recover and on July 28, 1918, was ordered transferred to Plattsburg Barracks, N. Y.

Examination on admission.—Complains of weakness in the back; states he tires very easily. Eyes are still weak; i. e., on trying to read, vision soon becomes blurred. Upon exertion, the old pain in the back and in the back of the head begins to trouble him again. Upon stooping or exertion becomes dizzy, though not so badly as formerly. Walking fast tires him quickly, but if he takes his time he can walk a good deal. Is somewhat underweight; weight, 130 pounds in ordinary clothing; height, 5 feet 7 inches; his usual weight in ordinary clothing is 150 pounds. Has scar over sacrum from bed sore. Is unable to touch toes with tips of fingers by stooping over without bending the knees on account of pain and stiffness in small of the back.

Patient was prescribed neck and body bending exercises and graded hikes. Note of October 8, 1918, states: "He feels now that he is as well as he was before he had meningitis." Recommended for duty by board of medical officers.

DEBARKATION HOSPITAL NO. 51, NATIONAL SOLDIERS' HOME, HAMPTON, VA.^m

The neuropsychiatric service of Debarkation Hospital No. 51 was organized on or about November 18, 1918. The first large convoy of overseas patients was received on November 20, 1918. This convoy contained approximately 300 mental cases who were placed in wards that were not well prepared for the reception of such cases. Notwithstanding this inadequacy of facilities, however, these patients were handled with only one accident, a minor one, an abortive attempt at self-injury on the part of the patient.

Reception of patients was rather slack during the remainder of the month. From about the middle of December, 1918, the debarkation of neuropsychiatric patients went on sporadically, large convoys of patients alternating with small ones. On January 1, 1919, 215 cases arrived and these were handled without difficulty.

Up to February 1, 1919, approximately 1,520 mental cases were cleared through this hospital and in this number, psychoneuroses, psychoses, constitutional psychopathic states, epileptics and mental defectives were found in the order named, organic disease of the central nervous system being far in the minority.

As this hospital functioned only as a debarkation hospital, none of these overseas cases were retained here for treatment. All cases were classified on standard blanks. After the diagnosis and condition of the patient was determined he was transferred to the hospital treating his special condition. Epileptics and mental defectives were sent to the camps nearest their homes for demobilization.

The psychoneuroses were all sent to General Hospital No. 30, Plattsburg Barracks, N. Y., and this was routine up to March 22, 1919. At that time a letter from the Surgeon General authorized the commanding officer to send to

^m Based on report of the neuropsychiatric service, Debarkation Hospital No. 51, National Soldiers' Home, Hampton, Va., by Capt. Nathaniel H. Brush, M. C., May, 1919. On file, Historical Division, S. G. O.

the nearest camp for demobilization all psychoneurosis cases who had sufficiently recovered to need no further treatment. This authority not only relieved the debarkation hospitals of a great burden, but also freed General Hospital No. 30 of many unnecessary cases.

A careful record was kept of the various types of cases received from the American Expeditionary Forces, from February 1, 1919, to March 31, 1919. During this period 589 neuropsychiatric cases were received. They were classified as follows:

Psychoneuroses.....	250	Mental defectives.....	39
Psychoses.....	184	Organic brain disease.....	14
Constitutional psychopathic states.....	54		
Epileptics.....	48	Total.....	589

In a general way this classification showed the usual type of cases received at this hospital. Careful and completely tabulated records were kept of the diagnoses in all cases from the opening of the hospital, but through an unavoidable accident these records were destroyed. The only records left at that time showed the clinical difficulties of the above listed group of 589 cases, but other statistics were available showing that up to April 27, 1919, when it terminated its debarkation activities, a total of 2,419 neuropsychiatric cases had been cleared through this hospital.

Early in March, 1919, two representatives of the Surgeon General inspected the hospital with a view to its conversion into a permanent hospital for the continued care and treatment of mental cases exclusively. The lay-out and plant seemed ideal, and almost immediately plans were formulated for the functioning of the hospital in its new capacity. On April 20, 1919, it became United States Army General Hospital No. 43 (q. v.).

UNITED STATES ARMY GENERAL HOSPITAL NO. 43, NATIONAL SOLDIERS' HOME, HAMPTON, VA.*

The hospital being designated to care for mental cases only, it is obvious that the neuropsychiatric service embraced the greater proportion of the professional work, but to provide adequate medical and surgical service for the patients it was necessary to continue medical, surgical (including genitourinary and eye, ear, nose, and throat departments), and dental services. The laboratory and hydrotherapeutic departments also were organized and equipped.

This institution was originally the National Soldiers' Home, and not having been built for mental cases, there were no standard wards. They varied in capacity from 35 to 200 beds. Some of the barracks were provided with the necessary screening for doors and windows to insure the retention of the irresponsible cases. Continuous baths were installed in three buildings for the treatment of excitable cases who required frequent and continuous baths to control their psychotic episodes. There were 22 wards in all, 8 of which were operated as closed wards. It was the policy to give the patient as much freedom as possible, and many kept in closed wards at night were paroled during the day.

* Based on report of professional work at General Hospital No. 43, for the year 1919, by the commanding officer, January 9, 1920. On file, Record Room, S. G. O., 319.1-2.

In the treatment of the mental cases the continuous sedative baths, hot packs, Scotch douches, needle showers, electric heat, occupational therapy, and exercise were the chief methods employed. Special efforts were made to avoid the use of narcotic and sedative drugs and very seldom were they used, and then never for other than temporary relief of an excitable or nervous patient at a time when it was not feasible to resort to the bath or pack. Probably drugs were not used in one-half dozen instances during the period covered by this report. The restraint sheet practically never was used.

One section of ward 18 was used for hydrotherapy. Temporary partitions were put in, dividing the room into small compartments for beds and stalls in which the patients disrobed. Ten beds were maintained in this department. The equipment consisted of two Scotch douches, two needle showers, four electric cabinets, and a number of incandescent-light baths for local application. A qualified masseur was employed in this department and his service in some instances apparently was very beneficial.

The more excitable cases were segregated in the wards provided with continuous baths, and the result of these baths in the control of such cases was very gratifying. There was no instance where a patient could not be quieted by the use of the hot pack or continuous bath if handled judiciously and the treatment was repeated at frequent intervals. Patients seldom objected to this treatment and many were glad to return to the baths.

Occupational therapy did much to establish confidence in the patient. The prime factor in this work was to obtain the gradual cooperation of the patient in order not to put him at a task that would be repulsive, and thereby make him worse. There was close cooperation between the ward surgeon and the reconstruction aides, and the helpless and irresponsible patients were coaxed to work on the wards. In this work they began with simple tasks, such as the winding of string, the unraveling of burlap, basketry, rug weaving, and knitting. As the patient regained his confidence and the control of his faculties and acquired more responsibility, he was allowed to do a different class of work requiring more physical and mental ability, such as carpenter work, printing work, typewriting, and automobile repairing.

Through the medium of exercise the patient's physical condition was kept as near normal as possible. Exercise was also useful in stimulating a desire for food. Care was taken in the selection and grouping of patients for the different exercises, giving them all the benefits of open air during the day. The less responsible patients were taken on walks, while the others were required to take varied calisthenic movements. Through the American Red Cross and other civilian organizations many automobile rides were arranged for the patients.

The granting of furloughs was very liberal when the condition of the patient warranted. In many instances a visit home unquestionably benefited the soldier.

On December 31, 1919, 3,206 patients had been treated at this hospital, classified as follows:

Psychosis:			
Dementia præcox.....	703	Dementia paralytica.....	2
Undiagnosed.....	223	Constitutional psychopaths.....	229
Manic-depressive.....	266	Mental deficiency (moron).....	298
Due to drugs, alcohol.....	158	Psychoneurosis.....	445
With cerebral syphilis.....	23	Epilepsy.....	72
With arteriosclerosis.....	3	General paralysis.....	277
Traumatic.....	9	Under observation for mental aliena- tion (no disease).....	6
Infectious and exhaustions.....	6	Nervous disease, undiagnosed.....	40
Anxiety.....	2		

The balance, 444, were not neuropsychiatric patients but transfer cases handled for the port of embarkation, old soldiers, and civilians.

There probably has been no institution in this country where the opportunities to study unusual mental diseases were so excellent as at this hospital. The material was abundant, and it is unfortunate that the personnel of the hospital had to change so frequently and that the pressure was so steady and the requests so insistent to get cases away to institutions near their homes, or otherwise released from the service.

The commanding officer reported that the members of the staff were impressed with the large number of mental cases that were diagnosed dementia præcox and who suggested a typical history of mental deterioration, who later had their mental faculties return almost to normal and were discharged, cured, or improved to such an extent that they could be released on their own responsibility. These cases were depressions of a mixed type which could not be differentiated from dementia præcox until they had been under observation for some time.

They were impressed also with the large number of cases that developed after the armistice was signed, conditions which could not be accounted for unless the etiological factor was purely anxiety and nostalgia. Many of these soldiers had gone through the worst of the fighting and were apparently normal a long while after the armistice was signed, then became confused and were later sent to hospitals for mental observation. A large number had actually returned to this country and were in the demobilization centers before they had their psychotic episodes.

A few cases were difficult to determine in persons who drank heavily in France but had been men of exemplary habits in civil life. In these cases it was the problem to decide whether the psychosis was of alcoholic origin or whether the soldier had become a victim of mental deterioration before he had begun to indulge in alcoholic debauches.

LETTERMAN GENERAL HOSPITAL, SAN FRANCISCO, CALIF.*

The psychopathic ward, with an authorized capacity of 60 beds, was opened to patients on October 17, 1918. Previously the mental patients were cared for in the detention ward along with general and garrison prisoners and

* Based on War diary, Letterman General Hospital, San Francisco, Calif., November 12, 1918. Also: History of Letterman General Hospital, by the commanding officer, June 21, 1920. Also: Annual report, Letterman General Hospital for 1918, by the commanding officer. On file, Historical Division, S. C. O.

men confined for punishment. The detention ward, with an authorized capacity of 50 beds was much overcrowded, but the more serious objection was the confinement of patients with prisoners behind bars. The opening of the psychopathic ward was, therefore, an epochal event. While the detention ward had a barred entrance, barred windows, barred doors and partitions and "cells," the psychopathic ward had no barred doors or windows, and had "rooms" and "dormitories." This improvement in the surroundings was of great advantage in the care and treatment of the insane. The building was well constructed, with many windows and two large air shafts affording good light and, with the aid of a fan system, adequate ventilation. The hallways and offices had good hardwood floors; the other floors were of colored cement. The single rooms and dormitories were located around the outside, hotel fashion. The ceilings were high and the rooms spacious. The general impression was pleasing to both patients and visitors. On the second floor was the reception or sick dormitory, and near it was a screened porch where patients could enjoy the air and a view of the bay and environs.

In the basement was the very complete hydrotherapeutic department. (Control table for needly spray, rain douche, Scotch douche, steam douche, perineal spray, liver spray, sitz bath; continuous bath with automatic control; electrohydraulic bath; electric light cabinet; electric coil cabinet; pack tables; massage tables; blanket warmer; scales, etc.). A large room adjoining the hydrotherapeutic room was utilized as a rest room, where patients were required to lie down for an individually designated time following treatment. The "hydro" nurse and his assistants were kept busy throughout the day, and very beneficial results were effected through their efforts. The nature of the treatment depended upon the individual case. Not only healthy functioning of the skin was secured, but through individual treatment a sedative, restful effect upon an excited, sleepless person and a stimulating effect upon a depressed, retarded patient.

Another important form of treatment was occupational therapy. Every patient, unless his physical state absolutely contraindicated, was expected to do some form of work morning and afternoon, the nature and duration of which were carefully regulated in each individual case. It was kept clearly in view that the object was to hasten recovery or at least to improve a chronic state, rather than to accomplish a set amount of work. Accordingly, variation of employment was given to increase interest, and above all the advancement from a simple to more complex tasks. Certain patients were not mentally fit to do regular duty, inside or outside the ward. Much attention was given to such patients in an attempt to draw them out to better results. To that end a large airy room in the basement was used for raffia work, basket weaving, games, or other activities designed to arouse interest and bring the patient into better contact with his environment. The man's former occupation and interest were taken into consideration. He was carefully observed for revival of interest, and wherever indicated he was drawn in that direction to better cooperation and eventually to duties on the ward. Patients were urged to take a personal interest in the cleanliness of the ward and were held responsible for certain windows, walls, floors, brass work, etc. A record was kept of each man's

activities, and his duties were varied to suit his condition. The man overcharged with energy was given a useful outlet for his activity, thus bringing him into better accord with his environment and hastening recovery.

Another class of patients, if allowed to do so, would gradually get out of touch with the world and shut themselves into a little world of their own imaginations. Along with this would result a marked dilapidation of personality, untidy appearance, lack of care of person, wetting and soiling, etc. Through proper attention to occupational therapy this deterioration could be prevented in marked degree and the patients held to more normal mental content, more natural appearance, and easier care. Whenever a man's condition permitted he was given outside work in shops, garden, etc., with greater liberty and resultant upbuilding of interest. All patients were benefited through recreation inside or outside the ward, such as athletic games, graphophone concerts, etc. The work of the educational department along these lines was most thorough and commendable.

Sharing in importance with the above was the work by the physician with the patient himself, investigating his difficulties, airing them and helping him straighten them out. In order to get best results it was necessary to secure the confidence and cooperation of the patient and to make him feel that the physician was his friend who had his best interest at heart. A careful record was kept of such investigations and interviews with the patient were repeated from time to time as indicated.

The psychopathic section of the medical service was extremely busy during the entire period of the war. The construction of the new and modern psychopathic ward greatly facilitated the handling of mental cases and enabled proper treatment to be given the patients. Though, as stated above, the ward was designed to accommodate 60 patients, at times it had to accommodate as many as 130, for after the signing of the armistice the hospital began to receive numbers of cases returned from France and from Siberia.

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- (4) History of General Hospital No. 30, Plattsburg, N. Y., by the commanding officer, April 14, 1919. On file, Historical Division, S. G. O.
- (5) Report on neuropsychiatric social service at General Hospital No. 30, Plattsburg, N. Y., March 1, 1919, by Margherite Rythier. On file, Record Room, S. G. O., 730 (Neuropsychiatry) (General Hospital No. 30) (K).

CHAPTER VI

DELINQUENCY

Among the duties assigned to the division psychiatrist was that of co-operating with judge advocates for the purpose of establishing in every division a method of treatment of delinquents similar to that in successful operation at the Fort Leavenworth Disciplinary Barracks. As a result of this, many cases of mental diseases were discovered among delinquents and the charges against them either were dropped and discharged on disability initiated, or, if the case was tried and sentence imposed, the findings of the court were approved, including discharge, and the confinement was omitted.

As in civil life, so in the Army, especially in such offenses as stealing, absence without leave, desertion, and persistent failure to obey orders, a certain proportion of offenders are mentally defective or mentally ill to such a degree that they can not reasonably be held responsible for their delinquencies. In such cases punishment is not effective; and by consigning irresponsible persons to prison for long terms, the Government is put to needless expense, the possibility of treatment is lost, and great injustice may be done individuals. For example, during the summer of 1918 the commanding officer of one of the camps in the United States was facing serious difficulties on the charges of neglect of duty about to be brought by the Inspector General of the Army. He had been frequently absent from his post, was lax in the enforcement of discipline, did not have the details of his command well in hand, organized an excessive number of entertainments, etc. Examination by a psychiatrist revealed a mild manic state, and upon the psychiatrist's report the charges were dropped and sick leave of six months was granted, at the expiration of which this officer had made a perfect recovery. Had a psychiatrist not been available, the matter would have ended quite differently, as the mental symptoms were not sufficiently pronounced to have justified the dropping of the charges, except on the recommendation of an expert. If the officer had been tried he would certainly have been convicted, which would have been a gross injustice to him, and would have postponed his recovery indefinitely.

NEUROPSYCHIATRIC DEPARTMENT, UNITED STATES DISCIPLINARY BARRACKS, FORT LEAVENWORTH, KANS.*

At the United States Disciplinary Barracks the work of the neuropsychiatric department was not confined, as it has been in some of the civil institutions where it has been used, to the detection of gross mental abnormality. On the contrary, the neuropsychiatric department was coordinated with every activity in the barracks. Each prisoner was regarded as an individual human being, and a personality survey was essential before any program was outlined for the

* Based on Report to the Surgeon General of the Army of the work of the class in disciplinary psychiatry at the United States Disciplinary Barracks, Fort Leavenworth, Kans., January and February, 1919, by Maj. Herman M. Adler, M.C., Mar. 1, 1919. On file, Historical Division, S.G.O.

prisoner. At every change that was made in his treatment, whether it was the granting of privileges, transfer to other living conditions, employment, education, release, or reinstatement in the Army, the neuropsychiatric officers were first called upon to examine into the facts and to make recommendations based upon the tendencies and the requirements of the individual prisoner. Many mistakes were made in this, and as a result, no doubt, justice was not always meted out; but taken as a whole the work of these officers justified itself in view of the fact that the disciplinary barracks were able somehow to weather the storm of war and all the bad conditions suggested above.

Many features of the psychiatric and sociological department of the Fort Leavenworth Disciplinary Barracks combined to make it an excellent place where trained psychiatrists could be fitted for their military duties. Psychiatrists there were kept in close touch with the battalion, learned paper work, became familiar with courts-martial proceedings, and had the most favorable opportunities for studying the reactions of the psychopathic personality to the military environment. Though the facilities there were not sufficient to provide an education in psychiatry, they were unsurpassed as far as the military-legal features of psychiatry were concerned.

After a complete survey of the three Army disciplinary barracks and the conditions at some of the large camps and posts, it was decided to proceed with plans already developed in the Surgeon General's Office for training psychiatrists for the Army. That part of the training which dealt with disciplinary features was assigned to the United States Disciplinary Barracks, Fort Leavenworth.

The work of this course began on January 1 and concluded on March 1, 1919. The program for the course consisted of two main parts: First, formal instruction; second, practical work.

The formal instruction consisted of lectures given daily, except Saturdays and Sundays, which covered the entire field of psychiatry, delinquency, and crime, the causes of delinquency, manifestations of delinquency, the management of delinquents while awaiting trial in guardhouses and after sentences in the disciplinary barracks, education and training of delinquents, the restoration to duty of delinquents, parole and aftercare. Special attention was paid to the methods employed by the civil authorities as well as military authorities. Lectures were given on police work, on crime treatment in civil courts, jails, and penitentiaries, the principles of institutional management, and the various phases of expert testimony and reports. Daily clinics were held at which presentation of cases was made.

SURVEY OF PRISONERS

The practical work consisted in a survey of the prisoners. This survey had a twofold application. In the first place, it served as a means of acquainting the officers with the variety of problems presented by the prisoners and gave them training in the proper methods of examination and in the formulating of recommendations based upon the findings in the individual cases. In the second place, it procured for the Army a considerable amount of exact information in regard to the prisoners at the institution and in regard to certain

problems of a general nature connected with the disciplinary problem as a whole. The survey was conducted as follows:

The prisoners were brought to the examination room in groups of about 300. They were then given the group psychological examinations and their mental rating determined. This having been done, the prisoners were assigned to the psychiatric officers. At the time of each examination the psychiatric officer had before him the complete record made by the department of psychiatry and sociology, including the history, physical and mental examination, educational record, industrial record, and the entire correspondence in regard to the prisoner, as well as the records of the executive officer that contained information as to the prisoner's conduct while in the disciplinary barracks. The psychiatric officer then examined the prisoner in regard to certain traits of personality. The traits of personality used in this examination were selected with no idea of making a complete inventory of each personality, but rather for the purpose of obtaining information in regard to the salient or decisive traits as related to the behavior and to the difficulties and successes of the prisoners. An attempt was then made to classify each prisoner according to the principal personality factors that appeared to underlie his social difficulties.

The information on the cards was arranged in three groups. First, information in regard to the physical and mental make-up of the individual. Second, information in regard to environmental opportunities of each individual. Third, information in regard to the success or failure of the individual availing himself of such personal or environmental advantages as he might possess.

Of the 3,000 prisoners examined, 436 belonged to the group of conscientious objectors. On account of the special interest attaching to this group, they were kept separate in the analyses.

INTELLIGENCE RECORD

This was performed by the psychological officers according to the methods followed in the examination of the Army.

REPORT OF PSYCHOLOGICAL EXAMINATIONS

GROUP EXAMINATIONS

The alpha and beta psychological group tests were given to 2,968 men. The distribution of the grades received by these men is shown below, together with some figures for the sake of comparison. The results are expressed in percentages.

	A	B	C+	C	C-	D	D-
United States Disciplinary Barracks.....	5.5	9.2	16.2	24.6	20.2	15.6	8.3
Camp Lee, August white draft.....	3.8	6.8	12.5	22.0	21.7	17.1	16.1
Normal company.....	5.0	15.0	15.0	30.0	15.0	15.0	5.0

It is apparent from the above data that the prisoners were a little better than the August draft at Camp Lee and only slightly below the theoretical normal company. It is also apparent that the prisoners were about an average group as regards intelligence.

INDIVIDUAL EXAMINATIONS

Of the 247 men receiving D- grades in the group tests, 171 were given individual examinations. The results of these tests are as follows:

	C	C -	D	E	Total
Stanford-Binet.....	2	11	29	80	122
Performance.....	0	1	12	36	49
Total.....	2	12	41	116	171
Per cent.....	1.2	7.1	24.1	61.4	-----

On the basis of these figures it appears that about 5 per cent only of the men in the institution were of such low mentality that it was considered likely that they would have been rejected from the draft had they been examined at the time of their entrance into the Army.

INTELLIGENCE RATINGS IN THE VARIOUS CRIME GROUPS

For the purpose of this study the crimes for which the men were sentenced to the institution were divided into the following groups:

A. Crimes of acquisitiveness, as larceny, robbery, forgery, fraud, etc.

S. Sex crimes of all descriptions.

P. Crimes of violence, such as assault, fighting, and murder.

M. Purely military crimes, such as absence without leave, desertion, escape, sleeping on post, drunk on post, discredit to uniform, and allowing escape of prisoners.

G. Military crimes of an aggressive nature, such as disrespect to officer, mutiny, disobedience of orders, and insubordination.

D. Disloyalty, disloyal statements, disrespect to the United States.

R. Conscientious objectors of the religious type.

K. Conscientious objectors of the political type.

Q. Conscientious objectors because of being alien enemies, of having alien enemy relatives, of noncitizenship, and other like draft irregularities.

This classification was made after considerable study of the data at hand, including past reports of the institution and the personnel cards. The identification and grouping of the conscientious objectors which was used in this study was followed as a part of the personnel survey also.

The records of 2,416 men make up the data of this study. The cases were taken at random just as they came up for examination. The results obtained were considered to present a good picture of the whole group of prisoners.

As some of the men had not yet been given the individual examination at the time when this study was made they were put in the table in a D- group. It was anticipated that about a third of these men would raise their grades upon further examination, while the rest would be rated E.

In the following table all figures except those in the columns headed "Totals" express percentages.

The regular prisoners and the men in the disciplinary battalion are tabulated in separate groups.

Crime group	A	B	C+	C	C-	D	D-	E	Total
A (regular)	8.2	12.8	24.8	28.2	16.6	9.2	0.3	0.3	320
A (battalion)	19.0	19.0	33.3	19.0	9.5	.0	.0	.0	21
P (regular)	.0	9.5	14.3	24.0	29.0	19.2	2.3	2.4	42
P (battalion)	10.0	10.0	10.0	50.0	.0	20.0	.0	.0	10
S (regular)	5.8	26.4	11.0	42.2	11.0	5.3	.0	.0	19
S (battalion)		^a 50.0		^a 50.0					2
O (regular)	4.7	3.1	12.5	28.2	21.6	20.2	3.9	4.2	128
O (battalion)	7.4	7.4	18.5	33.3	14.8	11.1	.0	7.4	27
M (regular)	4.0	8.6	13.5	26.3	21.6	19.7	2.8	4.5	1,071
M (battalion)	4.3	8.8	15.7	29.6	25.6	14.7	.6	.6	305
D (regular)	12.5	18.9	15.7	34.8	.0	6.2	3.1	9.4	32
D (battalion)				^b 50.0	^b 50.0				2
R	12.8	51.1	26.5	27.0	13.7	4.1	.1	.0	218
K	39.3	13.2	20.2	9.5	10.7	7.1	.0	.0	84
Q	1.5	2.2	8.1	15.5	21.2	37.0	4.5	10.6	135
Whole group	6.8	9.8	16.6	26.4	20.0	15.7	1.9	3.2	2,416

^a 1 case.^b 1 case each.

In the above tabulation the following significant facts are noteworthy: (1) The men in the disciplinary battalion were in general a little above the regular prisoners in intelligence. However, this superiority was very slight and is perhaps not significant in view of the fact that the number of cases in the battalion was small. (2) The men sentenced for the acquisitive crimes (Group A) were rather decidedly above the average and above most of the other groups. (3) The conscientious objectors of the religious and political groups were high grade men very markedly above the average of the whole group. This superiority was especially noticeable in the case of the political objectors. (4) The men classed as conscientious objectors because of being alien enemies, having alien enemy relatives, etc. (Group Q), were decidedly low in intelligence. This seemed to be the one group in the institution whose troubles might have been ascribed to low mentality. (5) The men who committed aggressive crimes of a military nature, who were disobedient to orders, disrespectful to officers, etc., were somewhat below the average mentally. On the other hand, the men whose aggressiveness amounted to disloyalty were considerably better than the average group, as less than 20 per cent of them fell below C.

As a supplement to the above, a special study was made of the conscientious objectors who had continually refused to do any work. Of these, six refused to take the examination. The records made by the others are given below.

	A	B	C+	C	C-	D	D-	E	Total
Religious	10.0	25.0	15.0	20.0	20.0	5.0	5.0	0	20
Political	59.0	5.9	11.7	.0	11.7	11.7	.0	0	17
Total	32.6	16.4	13.5	10.8	16.4	8.3	2.7	0	37

The examinations indicated to those conducting this study that the intelligence had little, if anything, to do with the fact that a man was confined in the disciplinary barracks. The distribution of intelligence was found to be about the average in the normal population, with the exception of the group of conscientious objectors belonging to the alien enemy groups, who were decidedly low in intelligence. It was obvious from this that the contentions made by many that delinquents as a class contained a large percentage of morons were

not true in regard to the disciplinary barracks, at least. Whatever the causes for confinement in this institution, they had to be sought for elsewhere than in the sphere of intelligence.

In order to arrive at information bearing on this, an inquiry was made into the previous career of each individual, especially in regard to his education and personality. On the basis of this study, the individual prisoners were classified so far as possible in three groups: Those who were repeatedly in difficulties with their environment (1) because of an exaggerated or excessive egocentric attitude; (2) because of an excessively unstable, emotional make-up; and (3) because of inadequacies of intellectual judgment. This classification was confined to individuals who gave repeated evidence of one or the other personality trend. It was not an attempt to classify all human personality and was, therefore, considered susceptible of failure in an application to individuals who had not had difficulties. It was hoped that a method could be worked out to such an extent as to make it applicable to wider groups.

On this basis a preliminary analysis of the examinations made showed that out of 3,028 cases, 2,088 were classified egocentric, 724 as inadequate, and 216 as emotionally unstable. While these figures were not intended to represent an accurate analysis, they were considered, broadly speaking, to be a fair index of the personality make-up of the population of this institution.

Out of the 2,968 men examined by psychological methods, 117 received a grade of E (unfit for military service).

With the methods of eliminating the mentally unfit that were used during the mobilization of the draft army, a very large proportion of the inadequate group, that might otherwise have come in, were kept out of the Army. It was obvious that even with the most rigorous attention to detail a certain number of the cases of this group under most conditions would be admitted. Some of these found their way to the disciplinary barracks. In addition to this group, there were others who were accepted during the period of voluntary enlistment who had never been examined mentally until they came to this institution.

In regard to the next group, that of the individuals whose difficulties could possibly be traced to a marked emotional instability, violent passion, uncontrollable anger, and similar manifestations, it is a characteristic of this type of individual that while he may be a serious menace, he has qualities which often, in fact as a rule, appeal to the sympathies of his associates. These individuals are likely to recover from their emotional upset very rapidly and are usually in a repentant mood and ready to make personal amends. The result is that, in general, all about them, from their fellow soldiers to the commanding officers, are inclined to be lenient with them and to take advantage of every circumstance that will enable them to pass over the episode as lightly as possible. Such individuals occur in every organization and often cause difficulties, but they rarely get beyond the guardhouse and only in extreme cases find their way to the disciplinary barracks.

The very large group of egocentric personalities, on the other hand, represents a type of individuals who not only get into difficulties because of their insubordination and inclination to have their own way regardless of any

other circumstances save those affecting their own desires, but they manage almost invariably, as a result of their arrogant, contemptuous, and often insolent bearing, to arouse the dislike or indignation of those with whom they are associated. These individuals always complain of injustice and not infrequently, because of other circumstances as mentioned, with some grounds. These are the individuals who represent the most difficult problem in personality to any organization and especially to an organization such as the Military Establishment, in which the factor of personal subordination to authority is so important. The analysis of this factor was not complete, but even on the basis of the above figures, it was obvious that this was the major problem in delinquency represented by the group of prisoners at Fort Leavenworth.

It was noted, in this connection, that the proportion of egocentrics to the other types was especially large in the conscientious objector group. As these examinations were made by 15 different examiners and in some cases were repeated by different examiners who almost invariably agreed in the diagnosis, these figures appeared to have significance. The proportion in the nonconscientious objector group was, egocentric, 1,657; inadequate, 666; and emotionally unstable, 211. In the conscientious objector group the proportion was, egocentric group, 431; inadequate, 58; emotionally unstable, 5. In other words, the egocentric group among the nonconscientious objectors was about twice as large as both the other groups. Among the conscientious objectors it was approximately seven times as large as both the other groups. It was noted, however, in this connection, that there were difficulties in the application of this classification to all individual cases. This was considered especially true of the conscientious objector group, where numbers of individuals might have had no record of previous difficulties of any serious sort before the one that brought them to the disciplinary barracks. However, the figures in regard to previous offenses were suggestive. Out of a group of 577 sentenced to the disciplinary barracks for disobedience of orders, 433 were conscientious objectors; 134 nonconscientious objectors and 235 conscientious objectors were sentenced here for their first military offense; 119 nonconscientious objectors and 26 conscientious objectors had committed previous military offenses and 138 nonconscientious objectors and 72 conscientious objectors had committed previous civil offenses. These previous offenses were distributed as follows: Violence, 96 nonconscientious objectors, 66 conscientious objectors; fraud, 3 nonconscientious objectors, 6 conscientious objectors; larceny, 27 nonconscientious objectors, 11 conscientious objectors; truancy, absent without leave, etc., 88 nonconscientious objectors, 12 conscientious objectors; absent without leave and desertion group, 1,346 nonconscientious objectors and 61 conscientious objectors.

Eleven of these conscientious objectors had committed previous civil delinquencies. Regarding the nature of the previous offenses, the records of the conscientious objectors showed 11 acts of violence, such as assault with a deadly weapon with intent to kill.

In regard to the definite mental diseases or psychopathic conditions in this group of 3,028 cases, 9 of the psychoses were examined, 4 of the psychoneuroses, 2 of the drug addictions, and 14 of the constitutional psychopathic states.

The work of the department of psychiatry and sociology resulted in the elimination from the institution of most of the cases falling in the psychopathic category.

The conscientious objector problem was, in the main, one of individualism and marked or excessive egocentric personality and, therefore, differed only in the distribution of the other types from that of the problem of all the other prisoners. Whether treatment by custodial methods at the disciplinary barracks was indicated, or not, depended largely upon the determination in each individual case as to whether the egocentric attitude was a deep-seated, fast personality characteristic, or whether it was merely a somewhat excessive manifestation of this trait under exceptional circumstances. The latter seemed to be the case in a certain group of individuals, and the solution of the problem therefore, so far as these were concerned, lay in their consideration as a social or political problem, rather than a disciplinary problem. In the great majority of the individuals in this institution, however, who were there because of their excessive egocentric characteristics, it appeared that this reaction was due to a fixed characteristic, not susceptible of change to any marked degree, and requiring long and patient training to effect any adjustment to environmental conditions. With these facts in mind, it was considered to be extremely important to avoid any appearance of individual discrimination, to refrain from any act in the management of these cases preceding trial, during trial, or after sentence and commitment, that would carry any appearance of justice to the invariable class of unfair treatment. It was believed that the only methods that could succeed in this class of cases and could form the foundation of an adequate disciplinary system were the methods that were developed in the institutional treatment of the extreme forms of egocentric personality exhibited by the paranoiac and paranoid psychoses. The principle was that whatever was done was done for the benefit and the relief of the individual suffering from the disorder, whether consciously or not. Retributive punitive treatment had been tried and discarded in this group. It failed for the same reasons in this other group of noninsane and nondefective delinquents of the egocentric personality. The basis of the treatment at the United States Disciplinary Barracks at Fort Leavenworth was always "a square deal" formula. It was difficult in this institution to maintain the appearance of this at all times. It was almost impossible when the institution was overcrowded with men suffering from classification at the hands of courts-martial, officers, and others who had to work under the difficulties of life in camp or in the field.

In regard to the two other groups, the problem was a much simpler one. Emotionally unstable individuals, on account of their general tendencies to arouse sympathy, had little difficulty if, by chance, they came to this institution. In the case of inadequate individuals, the problem of intensive training, or the education of such faculties as they had, was the chief consideration. Facilities of this institution were adequate in principle and arrangement, though somewhat overtaxed by the large population at the time this study was made.

CHAPTER VII

DISPOSITION OF MENTAL CASES

ARMY REGULATIONS GOVERNING DISCHARGE OF THE INSANE

Arrangements for the care, treatment, and eventual discharge of insane soldiers in the Army in peace time easily were made, as the number to be cared for was not large. Decision as to disposition in all cases was made in the War Department. Discharge by reason of insanity could be made only on order of the Secretary of War. To facilitate the decision of the Secretary of War, the papers forwarded to Washington in each case were to contain a statement as to whether the disability was or was not incurred in line of duty; and as to whether the patient, if discharged from the service, could be released from military control without danger to himself or others.¹ Disposition was made in one of three ways: (1) Soldiers who became insane in line of duty were transferred to St. Elizabeths Hospital in Washington for treatment and eventual discharge; or, (2) if not considered dangerous, either to himself or to others, the soldier could be discharged on a certificate of disability and furnished transportation to his home or the place of his enlistment. If he was transferred to St. Elizabeths Hospital, he was accompanied by a noncommissioned officer.² If he was discharged to his home, he might be accompanied, but usually was not. Upon arrival at the hospital, he was placed under treatment and discharged from the service, remaining a patient of the hospital; or, if he was permitted to return to his home, he was discharged on leaving his organization; or, if accompanied, upon arriving at his home. (3) Insane soldiers who were regarded as having been insane prior to enlistment, and hence not having incurred the disability in line of duty, were reported to relatives or to the local authorities at their places of residence. If the relatives expressed a willingness to receive and care for them, they were sent with attendants to the places where the relatives resided, placed in charge of the relatives, and discharged from the Army. In case the relatives would not agree to receive them, they were sent to their places of residence, turned over to local officials, usually the police, and then discharged. Certain cases not regarded as incurred in line of duty, such as general paralysis of the insane, were at times also sent to St. Elizabeths Hospital. The above procedure was provided for by the appended paragraphs of the Army Regulations: This procedure applied only to the enlisted personnel of the Army. Commissioned officers who became insane were ordered to appear before a retiring board for the necessary action. If retired, these officers were entitled to admission to St. Elizabeths Hospital for treatment, or they could be cared for in such other manner as their relatives might wish.

464. The following classes of persons are entitled by law to admission to St. Elizabeths Hospital, Washington, D. C.: (1) Officers, contract surgeons, and enlisted men of the Army who have become insane while in the military service, or within three years after their discharge therefrom, from causes which arose during and were incident to such service; (2) inmates of the Soldier's Home and of the National Home for Disabled Volunteer Soldiers; (3) civilian employees of the Quartermaster Corps who may become insane during such employment; (4) general prisoners; (5) interned persons and prisoners of war, under the jurisdiction of the War Department, who are or may become insane.

The Secretary of War is authorized by law to transfer from any military hospital to the nearest available public hospital for the care of the insane any insane patient who is in need of treatment, preference being given to the hospital nearest to the place of the patient's enlistment. The superintendent of such public hospital has the right to retain the aforementioned class of patients in his hospital in the same manner and to the same extent as now possessed by the superintendent of St. Elizabeths Hospital. The Secretary of War is also authorized by law, during the existing emergency, to transfer to the various public hospitals for the care of the insane, patients of every class entitled to treatment in St. Elizabeths Hospital and that are admitted on order of the Secretary of War. The War Department will from time to time advise department commanders and others concerned of the public hospitals designated by the Secretary of War to receive insane patients transferred under this authority. (C. A. R., No. 64, Dec. 13, 1917.)

464½. Applicants for enlistment and drafted men who are found to be insane after arrival at depot, post, or camp, and before the completion of their enlistment by oath, muster in, or otherwise, will be disposed of as follows: (1) Those whose liberation will be unattended by danger to themselves or others will be rejected and disposed of under the regulations governing the disposal of other rejected recruits; (2) those whose insanity is of a type that would probably make their liberation a source of danger to themselves or others will be delivered to the civil authorities authorized by law to apply for the commitment of insane persons, of the place where they applied for enlistment or whence they were drafted. The depot, post, or camp commander will provide the necessary escort for such delivery, and issue the necessary travel orders, transportation, and subsistence (in kind or by commutation as may be most suitable).

A similar procedure will be followed in the case of civilian employees of the Quartermaster Corps who are found to have been insane before the beginning of their employment. (C. A. R. No. 64, Dec. 13, 1917.)

465. (Changed by C. A. R., No. 46, W. D., 1916.) Except as provided in paragraph 467 of these regulations the insane of the military service enumerated in paragraph 464 who require treatment in institutions for the insane will be promptly transferred to the institutions designated to receive them respectively.

No person will be transferred under the provisions of this paragraph except after a critical examination by a board of at least two medical officers, of whom one shall, if practicable, be a specialist in nervous and mental diseases. The examination will preferably be made in hospital, and in the special ward for nervous and mental diseases, should there be one; and the board will not make its report until after the person being examined shall have been observed for a reasonable period of time. The report will give the diagnosis, a detailed account of the medical history of the case, and a statement as to whether the disability was or was not incurred in line of duty; also a statement as to whether the patient, if discharged from the service, can be released from military control without danger to himself or others, and the board's recommendation for or against the patient's transfer for treatment to such designated institution; all papers to be executed in duplicate.

Should the board recommend the patient's transfer for treatment to a designated institution, its report and all papers therewith and the medical certificate required by the Department of the Interior (blank form for which is furnished by The Adjutant General of the Army) properly filled in will be forwarded for the action of the department or division commander, who will, if he approves the transfer, issue the necessary orders therefor, and for such escort, transportation, and subsistence as may be required.

Commands that are ordinarily exempted from the control of department and division commanders will forward such papers to the commander of the department within the territorial limits of which the command is located, for his action.

The department or division commander will send one copy of the board's report and the medical certificate to the institution to which the patient is transferred, and will forward the second copy of the board's report, etc., with a note thereon of his action, to The Adjutant General of the Army.

If the patient so recommended is an enlisted man, the record, and the report of the board of examining medical officers, will be prepared on the certificate of disability blank form in duplicate, accompanied by the necessary attached papers, and, in the event that his transfer is ordered, he will be discharged from the service on account of disability. (C. A. R., No. 64, Dec. 13, 1917.)

466. (Changed by C. A. R., No. 13, W. D., 1914; No. 22, W. D., 1915; and No. 55, W. D., 1917.) Upon the departure of the insane patient his immediate commanding officer will make and sign an inventory, in duplicate, of his effects, and will send one copy of the inventory, together with his money and other valuables by registered mail, to the superintendent of the institution to which he is transferred, retaining the other copy for the records of the command. The other effects of the patient, such as clothing, will accompany him as baggage. Upon the patient's departure the commanding officer will by telegraph advise the institution thereof and of the time when the patient will be due to arrive. (C. A. R., No. 64, Dec. 13, 1917.)

467. The insane of the military service in the Philippine and Hawaiian Islands, who appear to require treatment in institutions for the insane, except natives, will be sent by the department commanders to Letterman General Hospital, San Francisco, Calif., for observation in that hospital, before action is taken in their cases in accordance with the provisions of paragraphs 465 and 470. The insane in the Canal Zone and among other forces overseas will in like manner be sent to an Army hospital in home country near the suitable home port of the Army Transport Service for observation preliminary to similar action.

Insane natives of the Philippine Islands and Porto Rico serving in the Army of the United States may, under authority of the Secretary of War, be sent to asylums in the Philippine Islands and Porto Rico, respectively, (C. A. R., No. 64, Dec. 13, 1917.)

468. Army patients committed to institutions for the insane under these paragraphs will, when cured, be released from custody under the laws and regulations governing the release of other cured patients. To obtain the release of an Army patient who is not cured, or his delivery to the care of friends, application must be made therefor to The Adjutant General of the Army, accompanied by the recommendation of the superintendent of the institution. (C. A. R., No. 64, Dec. 13, 1917.)

469. The insane who do not require treatment in institutions for the insane will, unless permanently incapacitated for military service, be retained under military control. If they are permanently incapacitated for service and can be liberated without danger to themselves or others they will be discharged on certificate of disability. In case it is necessary to send a soldier to his home with an attendant he should not be discharged until he reaches his destination. (C. A. R., No. 64, Dec. 13, 1917.)

470. An enlisted man who requires treatment in an institution for the insane by reason of insanity existing before his enlistment is not entitled under paragraph 464 to be cared for at the expense of the United States. Each such case will nevertheless be examined and reported on in the same manner as the cases referred to in paragraph 464. The conclusions of the board being approved by the authority who is to take final action thereon, the soldier will be discharged for disability, and the following procedure had: His immediate commanding officer will communicate with his family or friends, with the civil authorities authorized by law to apply for the commitment of insane persons of the State where he was enlisted or whence he was drafted, and with the like civil authorities of the State which he claims as his home, to ascertain whether they will receive and care for the man at their own expense. Should they agree to do so, the man will be sent under proper escort to the family or friends, or to the local authorities mentioned, as may be appropriate. Should they refuse to take charge of him the soldier will be sent to a designated public hospital for the insane pending

the determination of what civil authorities are legally required to assume his care and treatment. Upon the soldier's departure his commanding officer will by telegraph advise the hospital thereof and of the time the soldier will be due to arrive.

Whichever action is taken, the effects of the soldier will be inventoried as under paragraph 467; his money and valuables will be secured for disposition as indicated below; and his other effects, such as clothing, sent with him as baggage to his destination. In case his family or friends or the local committing authorities agree to receive him, they will be advised that his money and valuables are subject to the orders of the person legally authorized to receive the same in the insane man's behalf upon presentation of proof of such authority. In case he is sent to a designated public hospital for the insane pending the determination of what civil authorities are ultimately chargeable with his care, his money and valuables will be sent by registered mail to the superintendent of such hospital, accompanied by one copy of the inventory.

Full report of the action taken in each such case will be made to The Adjutant General of the Army. (C. A. R., No. 64, Dec. 13, 1917.)

With the great increase in the strength of the Army following the declaration of war, it was obvious that the procedure formerly followed could not meet adequately the new needs. St. Elizabeths Hospital could not possibly provide for all insane soldiers, and, even if it could, the transportation of large numbers of insane soldiers over long distances was impracticable. The sending of papers in all cases to Washington for decision and an order to discharge from the Secretary of War created, under the circumstances, unsatisfactory conditions in the camps where hospitals were congested with insane soldiers awaiting transfer or discharge. A general order was issued, therefore, which extended authority of discharge to division and departmental commanders.³ Certain other changes to facilitate expedition were likewise made from time to time in the Army Regulations.

In the cantonment two main problems presented themselves: (1) Disposition of soldiers insane in line of duty; (2) disposition of soldiers whose mental condition existed prior to admission into the Army. With a prompt examination of drafted men and volunteers upon their arrival at cantonments and before induction into the service, the question of "line of duty" could be settled with comparative ease. When men were not examined promptly on arrival, but only after several weeks or more of service, the question was not so easily determined; although from the condition of the patient, the nature and degree of his illness, and his previous history fairly accurate judgment could be made. Diagnoses and recommendations could frequently be made more rapidly than transfers or discharges could be arranged. While waiting for transfer or discharge patients were retained (except those who, assigned to quarters, could safely remain with their organizations) in the neuropsychiatric wards of the base hospitals. They were likewise cared for here if discharged until such time as arrangements could be made with relatives or civil authorities to receive them. In other words, insane soldiers were no longer just turned loose. An insane soldier when returned home was always accompanied if his condition demanded it, and in all other cases also if possible.

In some instances the admission of a soldier to hospital on account of a mental or nervous condition was not necessary. Whenever the peculiar actions of a soldier or his failure to adapt himself to his new environment was noticed by his commanding officer he was referred, either directly or through the regi-

mental surgeon, to the neuropsychiatric officer who, after a sufficient examination, submitted proper recommendation as to the disposition of the soldier. If necessary, he was admitted to hospital for further observation or treatment, but frequently, in such conditions as mental deficiency, constitutional psychopathic state, and certain of the psychoneuroses, this was considered unnecessary and the soldier was retained with his company or transferred to a development battalion, marked "quarters," and action initiated with a view to his discharge on account of physical disability. The "course of papers" in the camps (as in a regiment, for example) may be described as follows: (a) Regimental surgeon sent patient to hospital for diagnosis and observation. (b) Neuropsychiatric service reported patient "insane—should be discharged." (c) Report was made to commanding officer of hospital. (d) Commanding officer transmitted report to the man's regimental commander. (e) Regimental commander transmitted report to (1) company commander or (2) regimental surgeon. (f) Company commander initiated necessary form (S. C. D.) and sent it to regimental surgeon. (g) Regimental surgeon filled in his part of the form and transmitted it to the regimental commander. (h) Regimental commander made out the necessary papers for final action.

COOPERATION WITH CIVIL AUTHORITIES

Shortly after the mobilization of the World War Army began the Surgeon General communicated with the authorities in the different States inquiring if they would cooperate in relieving the Federal Government of the care and responsibility of recruits in whom insanity existed prior to enlistment, or in whom it was not an incident to service, as it was evident that cases of this character should not be a charge on the Federal Government. On September 20, 1917, the following communication was sent by the Surgeon General to all the States:⁴

The Surgeon General is called upon to make immediate arrangements for the care of the military insane in whom the insanity was not incurred in the line of duty. There will probably be one of these for every thousand troops mobilized, and the Surgeon General is desirous of making arrangements by means of which the different State hospitals will receive and care for the insane officers and soldiers of the above category from their own States.

It is evident that when the mental disease existed prior to enlistment or was for other reasons not contracted in line of duty, the cost of the care of the patient should not be a charge upon the Federal Government. The cost should be borne by the States. Division surgeons and other commanders will be advised that for each case the question of line of duty is to be carefully considered. All those in whom insanity was not incurred in line of duty will be released from military control on a certificate of disability whenever this can be done without danger to himself or to others. It is for the disposal of patients who can not be released from military control without danger to themselves or to others that the Surgeon General requests your immediate and hearty cooperation.

He directs me to inquire if you will cooperate with him to this end by receiving officers and soldiers of the above class, they being transported and delivered to any point or points named by you. In your reply you are requested to state to what point or points such cases should be sent. A prompt reply will be greatly appreciated.

By the middle of November, 1917, favorable replies had been received from 25 States. The Surgeon General then issued the circular following on the subject for the information of those concerned.

NOVEMBER 17, 1917.

STATE CARE OF INSANE SOLDIERS

(Subject to amendments and additions)

Authorities of the following States have signified their willingness to receive, care for, and maintain at State expense soldiers from their own State who require institutional care, when the insanity existed prior to enlistment or arose not in line of duty. No patient will be sent to any of the State institutions without assurance having been obtained from the State authorities that beds are available and without the exact point having been indicated to which the patient shall be delivered by the military authorities.

Arizona.—Communicate with medical superintendent, Arizona State Hospital, Phoenix, Ariz.

Connecticut.—Communicate with medical superintendent, Connecticut Hospital for Insane, Middletown, Conn.

Delaware.—Communicate with medical superintendent, State Hospital for Insane, Farnhurst, Del.

Idaho.—Communicate with medical superintendent, Idaho Insane Asylum, Blackfoot, Idaho.

Illinois.—Communicate with medical superintendent of most convenient institution, as follows: Alton State Hospital, Upper Alton; Anna State Hospital, Anna; Chester State Hospital, Menard; Chicago State Hospital for the Insane, Dunning; Elgin State Hospital, Elgin; Jacksonville State Hospital, Jacksonville; Kankakee State Hospital, Kankakee; Peoria State Hospital, Peoria; Watertown State Hospital, East Moline.

Iowa.—Communicate with medical superintendent of any of the following State hospitals: Cherokee State Hospital, Cherokee; Clarinda State Hospital, Clarinda; Independence State Hospital, Independence; Mount Pleasant State Hospital, Mount Pleasant; State Reformatory, Anamosa.

Maryland.—Communicate with Dr. Arthur P. Herring, 406-407 Professional Building, Baltimore, Md., who will designate proper State institution.

Massachusetts.—Communicate with medical superintendent, Boston Psychopathic Hospital, Boston, Mass.

Michigan.—Communicate with attorney general's department, Lansing, Mich., giving county where soldier was enlisted.

Minnesota.—Communicate with Downer Muller, secretary, State Board of Control, St. Paul, Minn.

Nebraska.—Communicate with Henry Gerdes, Board of Commissions of State Institutions, Lincoln, Nebr.

Nevada.—Communicate with Commissions for the Care of Indigent Insane, Carson City, Nev.

New Hampshire.—Communicate with medical superintendent, New Hampshire State Hospital, Concord, N. H.

New Mexico.—Communicate with medical superintendent, New Mexico Insane Asylum, Las Vegas, N. Mex.

New York.—Communicate with E. S. Elwood, secretary, State Hospital Commission, Albany, N. Y.

Ohio.—Communicate with E. F. Brown, secretary Ohio Board of Administration, Columbus, Ohio.

Oklahoma.—Communicate with medical superintendent, East Oklahoma State Hospital, Vinita, Okla.

Oregon.—Send insane soldiers to State institutions as follows: Those from Baker, Crook, Gilliam, Grant, Harney, Hood River, Jefferson, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler Counties, to be sent to medical superintendent, Eastern Oregon State Hospital at Pendleton, Ore.; those from Benton, Clackamas, Clatsop, Columbia, Coos, Curry, Douglas, Jackson, Josephine, Klamath, Lake, Linn, Lincoln, Lane, Marion, Multnomah, Polk, Tillamook, Washington, and Yamhill Counties to be sent to medical superintendent, Oregon State Hospital, at Salem, Ore.

Pennsylvania.—Communicate with Frank Woodbury, secretary committee on lunacy, Bulletin Building, Philadelphia, Pa., stating county where soldier enlisted.

Rhode Island.—Communicate with medical superintendent, State Hospital for Mental Diseases, Howard, R. I.

South Carolina.—Communicate with A. S. Johnson, secretary State Board of Charities and Corrections, Palmetto Building, Columbia, S. C., who will give directions.

Utah.—Communicate with medical superintendent, State Mental Hospital, Provo, Utah.

Vermont.—Communicate with medical superintendent, State Hospital for Insane, Waterbury, Vt.

Virginia.—If white soldiers, communicate with J. M. Bauserman, Commissioner of State Hospitals, Woodstock, Va. If colored, communicate with Dr. William F. Drewry, superintendent, Central State Hospital, Petersburg, Va.

Wisconsin.—Communicate with M. J. Tappins, secretary State Board of Control, Madison, Wis.

In March, 1918, the National Committee for Mental Hygiene was requested to take up the matter further with States which had not replied or which sent unfavorable replies. The vice chairman of the committee at once circularized the governors of all these States and in certain instances followed up the circular with further correspondence. The circular letter referred to is as follows:⁵

As you are doubtless aware, the Federal Government is prepared to provide care and treatment for the military insane in whom the insanity is incurred in the line of duty in the present war.

But it has been held that the cost of caring for the military insane in whom the mental disease existed prior to enlistment, or was for other reasons not contracted in line of duty, shall be borne by the several States. In order to assure absolute fairness and justice in deciding responsibility for the expense, most careful attention is being given in each instance to the question of line of duty.

On September 20, 1917, the Surgeon General sent to the appropriate authorities in your State a letter explaining this matter. A copy of the letter is inclosed.

The War Work Committee has been designated by the Surgeon General's Office to handle the correspondence about this matter, and we are in receipt of advices from the Surgeon General that a conference can not be entered into at this time. It would be appreciated if you would advise the appropriate authorities of the Surgeon General's advices that a quick decision in this matter is necessary and that a prompt reply at this time is desired to facilitate arrangements to provide for this class of persons.

A substantial number of the States have already responded favorably, directing which of their institutions will receive such cases and giving the name of the proper authorities with whom to communicate. Your early attention to this important matter in your State would be greatly appreciated.

On May 2, 1918, the vice chairman of the War Work Committee, National Committee for Mental Hygiene, reported to the Surgeon General the following results:⁶

On September 20, 1917, you sent a letter to the boards in control of the institutions for the insane in each State in the Union calling upon them to make arrangements for the care of their military insane in whom the insanity was not incurred in the line of duty. On November 30 you wrote me that 25 of the States had replied favorably as follows: Arizona, Connecticut, Delaware, Idaho, Illinois, Iowa, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, New Hampshire, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Utah, Vermont, Virginia, Wisconsin.

In that same letter (November 30), you stated that unfavorable replies, or no replies, had been received from: Alabama, Arkansas, California, Colorado, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Maine, Mississippi, Missouri, Montana, New Jersey, North Carolina, North Dakota, South Dakota, Tennessee, Texas, Washington, West Virginia, Wyoming.

In a letter dated March 16, 1918, you asked that the matter again be taken up with the States which had not taken appropriate steps. Accordingly, on April 5, letters were sent from this office to the governors of all such States calling the matter to their attention and asking them to take it up. Replies from the governors and boards to which they referred the letter have been coming to this office.

On the basis of the replies received by you in November, 1917, and the replies received by us in April, 1918, I have compiled an alphabetical list of the States, indicating the action which has been taken by the various States, and am inclosing it herewith.^b * * * I am also writing again to-day to some of the States which have not yet replied.

Most of the States thus eventually responded and entered whole-heartedly into the agreement to care for patients for whom the Army could not be expected to provide. The arrangement in general was, with certain variations, depending upon different methods of handling insane persons in the different States, that the military authorities would send patients of the above class to a point designated by the State authorities, and would then release the patient to the State authorities. Commanding officers were furnished lists of the States and the points to which patients were to be sent. This arrangement was of great assistance to the Medical Department and did not put a very great burden on the States. It worked most satisfactorily when there was a central State board such as a State commission on mental diseases with which all commanders could communicate and which could, in turn, at once indicate the special institution to which the recruit in question should be sent. In States where there were no central boards, correspondence over a considerable period frequently was necessary before it could be determined which of possibly several hospitals should receive the patient. In certain States not provided with committing officers the Medical Department met the moderate fee which was asked by physicians who executed the commitment papers.

CARE OF MENTAL CASES IN GOVERNMENT HOSPITALS

As the number of soldiers with nervous or mental disease who required treatment, or for whom it was necessary to care pending discharge increased, it was necessary to provide facilities other than those offered by the neuropsychiatric wards in base hospitals. To relieve the congestion in these wards and at St. Elizabeths Hospital, a number of neuropsychiatric centers, widely distributed geographically, to which such soldiers could be transferred for treatment or for care pending discharge, were established in various U. S. Army general hospitals.⁷

Mendocino State Hospital, Talmage, Calif., was designated by the Secretary of War to receive patients on the same status as at St. Elizabeths Hospital. This was done with a view of relieving congestion at St. Elizabeths Hospital, and also of avoiding the unnecessary transportation of the insane. St. Elizabeths Hospital itself was enlarged by 500 beds.

The increasing number of Army patients at St. Elizabeths Hospital overtaxed the efforts of the regular staff on duty there, and medical officers and

^b The list referred to included comments upon the character of the response made by each State. It showed only a few States whose response was unfavorable or who had failed to act up to that time. Those indicating favorable action were given as follows: Alabama, Arizona, Arkansas, Colorado, Connecticut, Delaware, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin.

enlisted men of the Medical Department were assigned to duty at the hospital.⁸ A detachment was organized and all military records were under the supervision of the commanding officer. A few neuropsychiatrists were assigned to assist the medical staff of the hospital in the treatment of these patients, and certain of the enlisted men were used as orderlies and helpers. There was a marked delay in accomplishing the discharge of the soldiers after their arrival at the hospital, and the detachment of patients was constantly increasing in numbers. To relieve this congestion of patients and in order that only cases of insanity which promised to be of long standing would be sent to St. Elizabeths Hospital, the following circular letter was issued from the Office of the Surgeon General on November 20, 1918:⁹

DISPOSAL OF THE INSANE

1. Members of the Military Establishment suffering from general paralysis of the insane and from insanity complicated by epilepsy (insane epileptics) shall be sent from hospitals at ports of embarkation and from other hospitals to St. Elizabeths Hospital, Washington, D. C., as provided by paragraph 464, Army Regulations, 1918, as amended by C. A. R., No. 64 December 13, 1917.

2. All other patients in the military service who present symptoms of insanity shall be retained in the military hospitals for necessary care and treatment provided the period of care and treatment shall not exceed four months.

3. All cases of epilepsy which can not be improved by medical or surgical treatment in the military hospitals shall be recommended for immediate discharge from the service without transfer to other military hospitals.

As the war proceeded it was considered desirable to require that all mental cases be treated for a reasonable period in the military hospitals. Directions recommended in June, 1918, sent out November 20, 1918, provided that all except cases which were evidently incurable should be treated in the military hospitals for a period of at least four months, unless recovery took place sooner, before being sent to St. Elizabeths Hospital.¹⁰ This provision enabled many patients to leave the Army well, without having been sent to an institution identified with the care of the insane, enabled many patients to pass their period of illness in the neighborhood of their homes, and avoided many unnecessary transfers. It also seemed to meet the hearty approval of the civil population.

The requirements of Army Regulations 470 (as amended), in so far as they pertained to insanity existing before enlistment, were nullified by the provisions of that section of the war risk insurance act which stated that "said officer, enlisted man, or other member shall be held and taken to have been in sound condition when examined, accepted and enrolled for service."¹¹

The interpretation placed on this proviso during the war was that once the officer or soldier was accepted he must be regarded, for purposes of compensation and future hospitalization, as having been mentally and physically sound when he came into the Army.¹² Therefore, theoretically, insanity could not have existed before enlistment and the soldier must be transferred to a public institution for the care of the insane.

After the armistice was signed and demobilization was under way it was possible to determine very closely the number of psychiatric cases which re-

mained to be disposed of. A census of the hospital accommodations showed that sufficient beds were available in Army general hospitals for the care of all insane cases remaining. In view of this fact and of the crowded conditions at St. Elizabeths Hospital, instructions were issued directing that no more insane soldiers be transferred to St. Elizabeths, but that all be retained in military hospitals pending further orders.¹³

FUNCTION OF THE BUREAU OF WAR RISK INSURANCE WITH RESPECT TO THE INSANE

The Bureau of War Risk Insurance had been charged by law with the duty of providing hospital care for the compensable insane after discharge from the military service. By that time the bureau was well established and was able to provide hospital facilities for all discharged soldiers entitled to such care. Section VII, General Orders, No. 57, War Department, April 30, 1919, provided as follows for the future disposition of the insane of the Army:

VII. *Care of compensable insane* (Cir. No. 225, W. D., 1919).—1. The Bureau of War Risk Insurance is charged by law with the duty of caring for the compensable insane of the military service after their discharge from the Army, and has undertaken to provide institutional treatment after discharge for cases requiring it. Such cases are to be turned over directly to the care and responsibility of the bureau in such a manner that there will be no interval between discharge from the military service and the commencement of the continued care in hospitals near their homes, which is to be provided by the bureau.

2. In order to accomplish this, the following procedure will be observed:

(a) Cases which have been under treatment in military hospitals in this country for four months, and which are considered to be incurable or to require a much longer period of hospital treatment to effect a cure, will be reported in writing by the commanding officer of the post, camp, or station directly to the chief medical advisor, Bureau of War Risk Insurance, Washington, D. C. (attention section of nervous and mental diseases), who will give instructions as to the disposition desired by the Bureau of War Risk Insurance. When reporting cases to the Bureau of War Risk Insurance under this paragraph, the following information regarding the soldier will be furnished: (1) Name, rank, organization, Army serial number, and race; (2) length of service; (3) legal residence; (4) name and residence of nearest relative; (5) diagnosis; (6) brief summary of medical history; (7) prognosis.

(b) Upon receipt of instructions from the Bureau of War Risk Insurance, the soldier will be ordered discharged on certificate of disability by the authority designated to order discharge in such cases. The same procedure as to preparation and disposition of records will be followed as outlined in Army Regulations governing the discharge of insane in the military service and their delivery to institutions. The soldier will be delivered to the designated institutions accompanied by necessary attendants, and not discharged until his arrival thereat. When the soldier has been delivered to the authorities of the institution designated to receive him, the senior attendant will ordinarily telegraph the commanding officer authorized to discharge the soldier. Upon receipt of this information the soldier will be discharged and discharge papers mailed to the authorities of the institution to which the soldier was transferred for delivery to the soldier. When a patient is delivered to an institution and discharged the Bureau of War Risk Insurance will be so informed in writing by the commanding officer concerned.

3. The provisions of this order do not in any way amend subparagraph a, Circular No. 188, War Department, 1918, relative to the discharge of a certain class of patients who possess funds or have relatives or friends who can afford them specialized care after discharge.

By the provisions of this order the whole question of the disposition of the insane was greatly simplified. After an ample period of observation in military hospitals the insane soldiers were transferred directly to the hospital designated

by the Bureau of War Risk Insurance, discharged from the Army upon arrival, and their treatment continued under the jurisdiction of the bureau, which in the future was responsible for their care. The United States Public Health Service, charged with the hospitalization of the beneficiaries of the Bureau of War Risk Insurance, opened numerous hospitals throughout the country for the care of the insane. In addition the Bureau of War Risk Insurance made arrangements with the authorities of many States for receiving the ex-service insane in the State hospitals provided for the care of this class of incapacitated. Through these facilities, the Bureau of War Risk Insurance usually was able to send the insane to some institution near their homes, an arrangement which in itself was a source of great comfort to the patient and his relatives. This procedure was most successful, and was continued during the remainder of the period in which the war Army was being demobilized.

REFERENCES

- (1) A. R. 465, 1913 (C. A. R., Nos. 10 and 46).
- (2) A. R. 467, 1913.
- (3) G. O. No. 133, W. D., October 11, 1917.
- (4) Letter from the Surgeon General to the governors of the various States, September 20, 1917, relative to State care of the military insane. Copy on file, Historical Division, S. G. O.
- (5) Letter from the vice chairman, War Work Committee, National Committee for Mental Hygiene, New York, to the governors of certain States, April 5, 1918, relative to State care of the military insane. Copy on file, Historical Division, S. G. O.
- (6) Letter from Dr. Frankwood E. Williams, New York, to Lieut. Col. Pearee Bailey, M. C., May 2, 1918. Subject: State care of military insane. Copy on file, Historical Division, S. G. O.
- (7) Annual Report of the Surgeon General, U. S. Army, 1919, Vol. II, 1164-1167.
- (8) Personnel files. Personnel Division, S. G. O.
- (9) Circular Letter, Surgeon General's Office, November 20, 1918.
- (10) Circular Letter S. G. O., November 20, 1918.
- (11) Act of Congress, approved October 6, 1917.
- (12) Opinions, Judge Advocate General, 1918-19.
- (13) Circular No. 164, W. D., 1919.

CHAPTER VIII

OCCURRENCE OF NEUROPSYCHIATRIC DISEASES IN THE ARMY

The reports received in the Office of the Surgeon General concerning the occurrence of neuropsychiatric diseases in the Army were of two entirely distinct classes. The first was the report card of sick and wounded (Form 52, Medical Department) which is forwarded for every officer or soldier admitted to sick report. In the second group were the special reports, required by the division of neuropsychiatry, which will be referred to at greater length in the following chapter.

The statistics compiled from the report cards of sick and wounded for all diseases are given in full in Volume XV, Part II, Medical and Casualty Statistics. From these statistics certain facts pertaining to the occurrence of neuropsychiatric diseases are recorded in Tables 1, 2, 3, and 4 below.

In Tables 1 and 2 every admission to sick report is considered. The only possible duplication would be that an individual may have been admitted more than once with the same diagnosis. This did not occur in any great number of instances, and the fact that it did occur among all the classes tabulated would tend to equalize the percentage of occurrence for purposes of comparison.

Table 2 shows for the following conditions a relatively higher degree of incidence among officers than enlisted men: Encephalitis, locomotor ataxia, apoplexy, neurasthenia, "shell-shock," neuritis, general paralysis of the insane, psychasthenia, psychoneurosis, and manic-depressive psychosis. The inclusion in this group of many of those indefinite functional disorders which usually are placed under the general term of psychoneuroses is of special interest. On the other hand, certain conditions occur much more frequently among the enlisted personnel. The marked preponderance in this respect of epilepsy, enuresis, constitutional psychopathic states, mental deficiency, and dementia præcox is striking.

Table 2 shows, also, the higher incidence rate among officers serving abroad than among those in the United States. Further, it is seen readily that while for the total Army the percentage of neuropsychiatric diseases existing among officers was higher than among enlisted men, among those serving in Europe this disproportion was even greater.

As noted before, the special neuropsychiatric examination was not given as a routine to commissioned officers of the Army. This fact readily explains the higher percentage of this type of defect existing among officers and also why this percentage was increased among those serving in Europe. (When neuropsychiatric surveys of troops were made, officers were seldom required to undergo the special examination.) Ordinarily, we would expect a considerably lower rate of neuropsychiatric disease among the type of men included in the officer group than in the general type representing the enlisted men. The failure of this corollary to hold true is explained by the elimination of a

large percentage of men, suffering from this class of disease, from the enlisted forces as a result of the efforts of the neuropsychiatrists.

A comparison of the ratio of these diseases occurring among enlisted men in the whole Army and among those serving in the United States and in Europe shows a much lower percentage for practically all neuropsychiatric diseases among the enlisted men in Europe. This marked reduction in the noneffective rate for this class of disease among the troops abroad is undoubtedly evidence of the efficiency of the neuropsychiatrists in detecting this type of defect before the soldiers had finished their period of training in this country. The general statement made above with reference to enlisted men as a whole applies similarly with reference to white and colored troops when considered separately.

In a comparison of the occurrence of neuropsychiatric diseases among white and colored troops, Table 2 discloses that the following diseases were recorded proportionately more often in white soldiers: Encephalitis, multiple sclerosis, neurasthenia, neurosis, "shell-shock," chorea, constitutional psychopathic state, dementia præcox, psychasthenia, psychoneurosis, alcoholic psychosis, and manic-depressive psychosis. The following diseases occurred in a higher ratio among the colored soldiers: Simple meningitis, locomotor ataxia, apoplexy, facial paralysis, paraplegia, epilepsy, Jacksonian epilepsy, enuresis, neurocirculatory asthenia, hysteria, neuralgia, neuritis, defective speech, general paralysis of the insane, and mental deficiency and malingering. In general, the ratio of occurrence of neuropsychiatric diseases in white and colored troops corresponds for the whole Army—the Army in the United States and the Army in Europe.

A comparison of Tables 3 and 4 with Tables 1 and 2 shows a smaller number discharged on certificate of disability than might have been expected for defects of this character. It must be remembered, however, that a certain number died, some remained in hospital, and disposition at the final date included, in the statistics, a considerable number who were regarded as fit for the performance of some military duty and who were retained in the service; an appreciable number, after the signing of the armistice, were discharged upon the demobilization of their organizations who, if the war had not ended, would have been discharged for disability.

TABLE 1.—*Neuropsychiatric diseases. Admissions, officers and enlisted men (except native troops), in the United States and Europe (except North Russia), April 1, 1917, to December 31, 1919. Absolute numbers*

	Total U. S. Army (excepting native troops)					U. S. Army in United States					U. S. Army in Europe (excluding Russia)				
	Offi- cers	Enlisted men			Total officers and en- listed men	Offi- cers	Enlisted men		Total officers and en- listed men	Offi- cers	Enlisted men			Total officers and en- listed men	
		White	Col- ored	Color not stated			White	Col- ored			Total	White	Col- ored		Color not stated
Encephalitis.....	7	66	3	4	73	1	37	2	39	40	6	29	1	3	39
Meningitis, simple.....	11	393	63	39	495	6	268	32	243	249	5	176	28	39	243
Locomotor ataxia.....	19	184	22	4	210	14	153	19	172	186	3	27	3	2	35
Multiple sclerosis.....	5	226	13	2	241	4	206	13	219	223	1	16		2	19
Spinal cord, other diseases of.....	13	564	39	10	613	6	476	35	511	517	6	75	9	9	94
Apoplexy.....	24	305	32	10	367	13	242	46	288	301	12	53	5	10	68
Facial paralysis.....	17	258	24	5	289	306	132	13	145	153	9	118	11	7	145
Paraplegia.....	3	60	7	5	74	2	49	7	56	48		9	2	5	16
Paralysis without specified cause.....	37	981	77	24	1,082	23	770	55	825	848	14	187	18	22	227
Epilepsy.....	32	7,523	1,047	109	8,679	38	6,237	875	7,112	7,150	10	1,142	156	108	1,416
Idiosyncrastic epilepsy.....	1	104	14		118		89	12	101	1					
Neurasthenia.....	891	7,559	267	202	8,028	8,919	5,272	209	5,481	5,983	325	1,989	49	199	2,237
Enuresis.....	5	737	241	10	2,988	2,993	2,383	178	2,561	2,561	3	274	37	10	324
Neurosis.....	38	743	42	11	796	834	512	38	550	567	21	217	4	11	232
Neurocirculatory asthenia.....	66	3,768	468	74	4,310	4,376	2,335	347	2,682	2,698	50	1,430	121	74	1,625
Shell-shock (cause not given).....	239	3,281	27	351	3,659	3,898	18	87	1	88	220	3,184	26	349	3,779
Chorea.....	1	307	9	4	320	321	278	9	287	288		22		4	26
Hysteria and results.....	152	5,533	452	105	6,090	6,242	3,643	348	3,991	4,046	96	1,781	92	104	1,977
Neuralgia.....	221	4,594	529	173	5,296	5,517	3,499	384	3,883	4,031	69	905	118	108	1,191
Neuritis.....	478	4,890	603	190	5,643	6,121	3,118	482	3,600	3,881	190	1,625	115	150	1,890
Speech, defective.....	2	184	25	1	210	210	163	29	188	189	1	16		1	17
Nervous system (other diseases of).....	459	4,511	364	117	4,992	5,451	3,646	286	3,932	4,316	69	748	61	115	924
General paralysis of the insane.....	25	245	22	59	326	326	194	16	210	231	4	46	6	8	60
Constitutional psychopathic states.....	87	4,913	174	59	5,146	5,233	3,882	144	4,028	4,079	31	982	28	51	1,062
Mental deficiency.....	12	1,202	1,764	85	13,051	13,063	4	9,947	1,618	11,565	3	1,138	138	81	1,357
Manic-depressive.....	4	658	74	11	743	746	2	511	566	577	1	118	13	11	143
Malingering.....	50	5,793	349	57	6,199	6,249	5,016	277	5,293	5,299	10	660	58	57	775
Dementia praecox.....	111	673	9	17	699	840	66	468	475	541	39	191	2	16	209
Psychasthenia.....	403	7,054	316	131	7,501	7,904	3,399	231	3,630	3,721	308	3,626	84	131	3,841
Psychosis.....	24	539	13	13	565	589	367	7	374	374	16	143	6	13	162
Alcoholic.....	129	1,790	119	30	1,989	2,068	1,395	94	1,489	1,569	47	367	24	30	421
Manic-depressive.....	156	2,855	205	88	3,148	3,304	1,350	42	1,392	1,454	90	1,434	159	84	1,767

TABLE 2.—*Neuropsychiatric diseases. Admissions, officers and enlisted men (except native troops), in the United States and Europe (except North Russia), April 1, 1917, to December 31, 1919. Rates per 1,000 per annum*

	Total U. S. Army (excepting native troops)				U. S. Army in United States				U. S. Army in Europe (excluding Russia)			
	Off- icers	Enlisted men		Total officers and enlisted men	Off- icers	Enlisted men		Total officers and enlisted men	Off- icers	Enlisted men		Total officers and enlisted men
		White	Colored			White	Colored			White	Colored	
Encephalitis.....	0.03	0.02	0.01	0.02	0.01	0.02	0.01	0.02	0.08	0.02	0.01	0.02
Meningitis, simple.....	.05	.11	.22	.13	.12	.05	.11	.12	.07	.12	.23	.15
Locomotor ataxia.....	.09	.05	.08	.05	.06	.11	.08	.12	.11	.04	.02	.02
Multiple sclerosis.....	.02	.08	.05	.06	.08	.03	.10	.08	.08	.02	.02	.02
Spinal cord (other diseases of).....	.06	.16	.14	.16	.15	.05	.24	.24	.10	.01	.01	.01
Apoplexy.....	.12	.08	.18	.09	.10	.10	.12	.14	.13	.04	.03	.06
Facial paralysis.....	.08	.07	.08	.07	.07	.06	.07	.07	.12	.04	.04	.05
Paraplegia.....	.01	.02	.03	.02	.02	.02	.03	.03	.08	.01	.01	.01
Paralysis without specified cause.....	.18	.27	.28	.28	.27	.19	.39	.38	.19	.23	.44	.44
Epilepsy.....	.23	2.69	3.65	2.23	2.13	.31	3.17	3.63	.38	1.27	.88	.85
Jacksonian epilepsy.....	.00	.05	.03	.03	.03	.03	.03	.03	.44	.01	.01	.01
Epilepsia partialis.....	.43	2.10	.83	2.77	2.75	4.04	2.03	2.60	.82	1.35	.40	1.41
Neurasthenia.....	.02	.26	.31	.26	.27	.14	.26	.26	.15	.04	.30	.30
Nervous.....	.02	.26	.31	.26	.27	.14	.26	.26	.15	.04	.30	.30
Nervous system (other diseases of).....	.16	.01	.02	.01	.01	.19	.04	.04	.28	.27	.21	.27
Neurosis.....	.02	.26	.31	.26	.27	.14	.26	.26	.15	.04	.30	.30
Neurosis (cause not given).....	.02	.26	.31	.26	.27	.14	.26	.26	.15	.04	.30	.30
Neurosis (cause not given).....	.02	.26	.31	.26	.27	.14	.26	.26	.15	.04	.30	.30
Chorea.....	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Hysteria and results.....	.74	1.54	1.58	1.57	1.53	.44	1.85	2.39	1.30	.21	.21	.21
Neuritis.....	1.07	1.28	1.85	1.36	1.35	.19	1.78	2.64	1.80	.62	.96	.75
Neuritis.....	2.32	1.36	2.10	1.45	1.50	2.26	1.59	3.31	1.74	2.58	.94	1.19
Speech, defective.....	.01	.05	.09	.05	.05	.01	.05	.06	.08	.01	.01	.01
General paralysis of the insane.....	2.22	1.25	1.27	1.28	1.33	.00	1.85	1.86	1.83	.04	.51	.50
Constitutional psychopathic states.....	.12	.07	.08	.07	.07	.17	.10	.11	.10	.05	.03	.04
Mental deficiency.....	.42	1.36	.61	1.32	1.28	.43	1.98	.99	1.82	.42	.67	.66
Malnutrition.....	.06	3.11	6.16	3.36	3.19	.03	5.06	5.18	.04	.77	.13	.85
Dementia precox.....	.01	.18	.20	.19	.18	.02	.20	.38	.25	.01	.08	.09
Psychasthenia.....	.24	1.61	1.22	1.60	1.53	.29	2.55	2.31	.24	.53	.45	.47
Psychoneurosis.....	.54	1.93	1.10	1.93	1.93	.73	1.73	1.59	.69	4.18	.69	2.41
Psychosis.....	1.95	1.96	1.10	1.93	1.93	.73	1.73	1.59	.69	4.18	.69	2.41
Alcoholic.....	.12	.15	.05	.15	.14	.06	.19	.05	.17	.22	.10	.11
Manic-depressive.....	.63	.50	.42	.50	.51	.64	.71	.64	.70	.25	.20	.28
Others.....	.76	.79	.72	.81	.81	.50	.69	.66	1.22	.98	1.30	1.06

TABLE 3.—*Neuropsychiatric diseases. Discharges for disability, officers and enlisted men (except native troops), in the United States and Europe (except North Russia), April 1, 1917, to December 31, 1919. Absolute numbers*

Total U. S. Army (excepting native troops)				U. S. Army in United States				U. S. Army in Europe (excluding Russia)						
Officers	Enlisted men			Total officers and enlisted men	Officers	Enlisted men			Total officers and enlisted men	Officers	Enlisted men			Total officers and enlisted men
	White	Colored	Color not stated			White	Colored	Total			White	Colored	Color not stated		Total
2	16	13	1	16	18	1	9	13	9	10	1	7	8	8
	65	11	2	79	79		63	11	76	76		2	3	3
2	111	1		124	126	2	101	11	112	114	2	1	1	3
1	183	10		193	194	1	171	10	181	182	1	10	10	10
4	301	27	5	333	337	4	284	26	310	314	15	16	16	16
2	145	28	3	176	178	2	129	28	157	159	2	15	15	15
2	46	7	2	55	57	2	33	6	39	41	12	13	13	13
1	31	6	2	39	40		30	5	35	35	1	1	1	3
4	322	28	23	373	377	2	298	28	326	328	1	21	23	24
13	4,671	673	28	5,372	5,385	10	4,233	608	4,841	4,851	3	387	62	461
	41	8		49	49		1,883	82	1,965	2,013	7	184	5	195
60	2,085	87	24	2,196	2,256	48	1,830	66	1,896	1,957	10	15	10	15
1	661	4		733	734	1	641	19	660	679	1	149	4	154
2	134	19	2	155	157	1	130	19	149	150	1	71	3	74
5	1,549	261	6	1,816	1,821	3	1,476	288	1,764	1,757	1	20	1	21
3	58	2		60	63	2	38		38	40	1	3		3
	150	5		155	155		146	5	151	151		3		3
15	1,915	182	27	2,124	2,139	11	1,714	170	1,884	1,895	4	18	11	206
	32	1		34	34		29	1	30	30		2		2
18	544	324	5	873	891	13	487	321	808	821	4	55	3	63
1	131	17	1	149	150		123	17	140	147		1		8
9	464	26	2	492	501	6	445	26	471	477	3	17		20
7	191	17	5	213	220	7	180	15	195	182	1	31	2	34
16	3,337	123	32	3,492	3,778	14	3,180	111	3,294	3,308	1	313	7	329
4	9,087	1,566	51	10,604	10,648	1	8,549	1,416	9,965	9,966	1	407	85	506
	150	5		155	155		146	5	151	151		3		3
1	31	6	2	39	40	2	30	5	35	35	1	1	1	3
4	322	28	23	373	377	2	298	28	326	328	1	21	23	24
13	4,671	673	28	5,372	5,385	10	4,233	608	4,841	4,851	3	387	62	461
	41	8		49	49		1,883	82	1,965	2,013	7	184	5	195
60	2,085	87	24	2,196	2,256	48	1,830	66	1,896	1,957	10	15	10	15
1	661	4		733	734	1	641	19	660	679	1	149	4	154
2	134	19	2	155	157	1	130	19	149	150	1	71	3	74
5	1,549	261	6	1,816	1,821	3	1,476	288	1,764	1,757	1	20	1	21
3	58	2		60	63	2	38		38	40	1	3		3
	150	5		155	155		146	5	151	151		3		3
15	1,915	182	27	2,124	2,139	11	1,714	170	1,884	1,895	4	18	11	206
	32	1		34	34		29	1	30	30		2		2
18	544	324	5	873	891	13	487	321	808	821	4	55	3	63
1	131	17	1	149	150		123	17	140	147		1		8
9	464	26	2	492	501	6	445	26	471	477	3	17		20
7	191	17	5	213	220	7	180	15	195	182	1	31	2	34
16	3,337	123	32	3,492	3,778	14	3,180	111	3,294	3,308	1	313	7	329
4	9,087	1,566	51	10,604	10,648	1	8,549	1,416	9,965	9,966	1	407	85	506
	150	5		155	155		146	5	151	151		3		3
1	31	6	2	39	40	2	30	5	35	35	1	1	1	3
4	322	28	23	373	377	2	298	28	326	328	1	21	23	24
13	4,671	673	28	5,372	5,385	10	4,233	608	4,841	4,851	3	387	62	461
	41	8		49	49		1,883	82	1,965	2,013	7	184	5	195
60	2,085	87	24	2,196	2,256	48	1,830	66	1,896	1,957	10	15	10	15
1	661	4		733	734	1	641	19	660	679	1	149	4	154
2	134	19	2	155	157	1	130	19	149	150	1	71	3	74
5	1,549	261	6	1,816	1,821	3	1,476	288	1,764	1,757	1	20	1	21
3	58	2		60	63	2	38		38	40	1	3		3
	150	5		155	155		146	5	151	151		3		3
15	1,915	182	27	2,124	2,139	11	1,714	170	1,884	1,895	4	18	11	206
	32	1		34	34		29	1	30	30		2		2
18	544	324	5	873	891	13	487	321	808	821	4	55	3	63
1	131	17	1	149	150		123	17	140	147		1		8
9	464	26	2	492	501	6	445	26	471	477	3	17		20
7	191	17	5	213	220	7	180	15	195	182	1	31	2	34
16	3,337	123	32	3,492	3,778	14	3,180	111	3,294	3,308	1	313	7	329
4	9,087	1,566	51	10,604	10,648	1	8,549	1,416	9,965	9,966	1	407	85	506
	150	5		155	155		146	5	151	151		3		3
1	31	6	2	39	40	2	30	5	35	35	1	1	1	3
4	322	28	23	373	377	2	298	28	326	328	1	21	23	24
13	4,671	673	28	5,372	5,385	10	4,233	608	4,841	4,851	3	387	62	461
	41	8		49	49		1,883	82	1,965	2,013	7	184	5	195
60	2,085	87	24	2,196	2,256	48	1,830	66	1,896	1,957	10	15	10	15
1	661	4		733	734	1	641	19	660	679	1	149	4	154
2	134	19	2	155	157	1	130	19	149	150	1	71	3	74
5	1,549	261	6	1,816	1,821	3	1,476	288	1,764	1,757	1	20	1	21
3	58	2		60	63	2	38		38	40	1	3		3
	150	5		155	155		146	5	151	151		3		3
15	1,915	182	27	2,124	2,139	11	1,714	170	1,884	1,895	4	18	11	206
	32	1		34	34		29	1	30	30		2		2
18	544	324	5	873	891	13	487	321	808	821	4	55	3	63
1	131	17	1	149	150		123	17	140	147		1		8
9	464	26	2	492	501	6	445	26	471	477	3	17		20
7	191	17	5	213	220	7	180	15	195	182	1	31	2	34
16	3,337	123	32	3,492	3,778	14	3,180	111	3,294	3,308	1	313	7	329
4	9,087	1,566	51	10,604	10,648	1	8,549	1,416	9,965	9,966	1	407	85	506
	150	5		155	155		146	5	151	151		3		3
1	31	6	2	39	40	2	30	5	35	35	1	1	1	3
4	322	28	23	373	377	2	298	28	326	328	1	21	23	24
13	4,671	673	28	5,372	5,385	10	4,233	608	4,841	4,851	3	387	62	461
	41	8		49	49		1,883	82	1,965	2,013	7	184	5	195
60	2,085	87	24	2,196	2,256	48	1,830	66	1,896	1,957	10	15	10	15
1	661	4		733	734	1	641	19	660	679	1	149	4	154
2	134	19	2	155	157	1	130	19	149	150	1	71	3	74
5	1,549	261	6	1,816	1,821	3	1,476	288	1,764	1,757	1	20	1	21
3	58	2		60	63	2	38		38	40	1	3		3
	150	5		155	155		146	5	151	151		3		3
15	1,915	182	27	2,124	2,139	11	1,714	170	1,884	1,895	4	18	11	206
	32	1		34	34		29	1	30	30		2		2
18	544	324	5	873	891	13	487	321	808	821	4	55	3	63
1	131	17	1	149	150		123	17	140	147		1		8
9	464	26	2	492	501	6	445	26	471	477	3	17		20
7	191	17	5	213	220	7	180	15	195	182	1	31	2	34
16	3,337	123	32	3,492	3,778	14	3,180	111	3,294	3,308	1	313	7	329
4	9,087	1,566	51	10,604	10,648	1	8,549	1,416	9,965	9,966	1	407	85	506
	150	5		155	155		146	5	151	151		3		3
1	31	6	2	39	40	2	30	5	35	35	1	1	1	3
4	322	28	23	373	377	2	298	28	326	328	1	21	23	24
13	4,671	673	28	5,372	5,385	10	4,233	608	4,841	4,851	3	387	62	461
	41	8		49	49		1,883	82	1,965	2,013	7	184	5	195
60	2,085	87	24	2,196	2,256	48	1,830	66	1,896	1,957	10	15	10	15
1	661	4		733	734	1	641	19	660	679	1	149	4	154
2	134	19	2	155	157	1	130	19	149	150	1	71	3	74
5	1,													

TABLE 4.—*Neuropsychiatric diseases. Discharges for disability, officers and enlisted men (except native troops), in the United States and Europe (except North Russia), April 1, 1917, to December 31, 1919. Rates per 1,000 per annum*

	Total U. S. Army (excepting native troops)				U. S. Army in United States				U. S. Army in Europe (excluding Russia)				
	Off- icers	Enlisted men			Total officers and enlisted men	Off- icers	Enlisted men		Total officers and enlisted men	Off- icers	Enlisted men		Total officers and enlisted men
		White	Colored	Total			White	Colored			Total		
Encephalitis.....	0.1	0.00	0.05	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Meningitis, simple.....													
Locomotor ataxia.....													
Multiple sclerosis.....	.01	.03	.04	.03	.03	.02	.03	.04	.03	.02	.00	.00	.00
Spinal cord (other diseases of).....	.00	.05	.03	.05	.05	.01	.09	.08	.05	.05	.01	.01	.01
Apoplexy.....	.02	.08	.09	.09	.08	.03	.14	.18	.15	.14	.01	.01	.01
Facial paralysis.....	.01	.04	.10	.05	.04	.02	.07	.19	.07	.07	.01	.01	.01
Paraplegia.....	.01	.02	.01	.01	.01	.02	.02	.04	.02	.02	.01	.01	.01
Paralysis without specified cause.....	.00	.01	.02	.01	.01	.02	.03	.03	.02	.02	.00	.01	.01
Epilepsy.....	.02	.09	.10	.10	.09	.02	.15	.15	.15	.01	.01	.01	.01
Jacksonian epilepsy.....	.06	1.30	2.35	1.38	1.32	.08	2.15	4.17	2.17	.00	.26	.51	.29
Neurasthenia.....													
Neurosis.....	.29	.58	.30	.57	.55	.39	.96	.56	.33	.00	.00	.00	.00
Neurocirculatory asthenia.....	.00	.18	.24	.19	.18	—	.33	.45	.33	.09	.13	.04	.12
Shell-shock (cause not given).....	.02	.43	.91	.47	.45	.02	.75	.82	.78	.01	.05	.02	.05
Chorea.....	.01	.04	.02	.04	.04	.02	.02	.02	.02	.01	.01	.01	.01
Hysteria and results.....	.07	.53	.64	.55	.52	.09	.87	1.17	.89	.03	.12	.09	.13
Neuralgia.....													
Neuritis.....	.09	.15	1.13	.22	.22	.10	.25	.38	.37	.05	.04	.02	.04
Speech, defective.....	.00	.04	.06	.04	.04	—	.06	.11	.07	.06	.01	.00	.00
Nervous system (other diseases of).....	.04	.13	.09	.13	.12	.05	.23	.18	.22	.21	.04	.01	.01
General paralysis of the insane.....	.03	.05	.06	.05	.05	.06	.08	.10	.08	.08	.02	.02	.02
Constitutional psychopathic states.....	.08	.98	.43	.95	.91	.11	1.62	.78	1.56	1.48	.01	.21	.20
Mental deficiency.....	.02	2.52	5.26	2.74	2.60	.01	4.35	9.71	4.72	.01	.32	.69	.34
Malingering.....													
Dementia precox.....	.13	1.48	1.20	1.48	1.41	.17	2.28	1.83	2.25	2.13	.07	.52	.55
Psychasthenia.....	.06	.09	.01	.08	.08	.06	.14	.02	.13	.05	.02	.02	.02
Psychoneurosis.....	.12	.67	.56	.67	.64	.16	1.15	1.05	1.15	.05	.09	.07	.10
Psychosis:													
Alcoholic.....		.05	.01	.05	.04	—	.07	.01	.07	.06	.02	.01	.02
Manic-depressive.....	.18	.42	.41	.43	.42	.23	.63	.62	.63	.09	.19	.21	.20
Others.....	.08	.26	.31	.27	.26	.10	.38	.49	.39	.04	.12	.12	.12

CHAPTER IX

ANALYSIS OF SPECIAL NEUROPSYCHIATRIC REPORTS

The neuropsychiatric statistics here considered were prepared with little reference to the number of men examined. In the following pages estimates as to this number are made, but these are merely estimates. Complete reports as to the number examined were not received. The reported total number of men with neuropsychiatric conditions who entered the military service can not be considered the correct number, as it has already been shown that the neuropsychiatric examination was not given to all of the first increments of drafted men reporting at the camps. Further, many officers and the majority of those who served in the Students' Army Training Corps and the National Guard were not examined. After a careful consideration of all the facts, the total

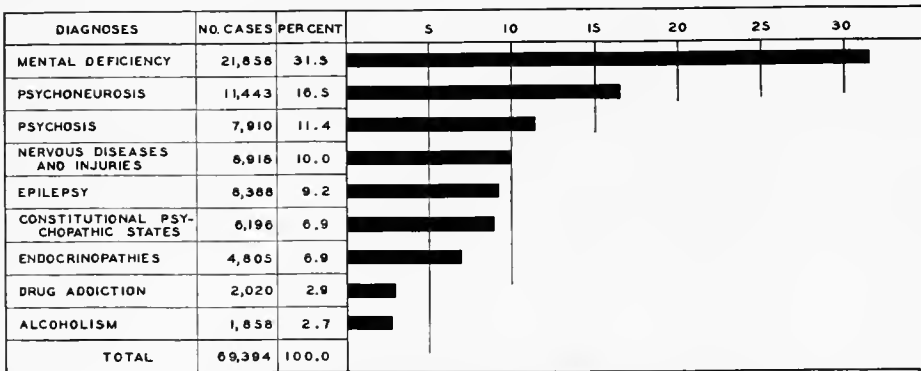


CHART I.—Diagnoses of neuropsychiatric cases (home forces)

number who underwent this special examination is placed at approximately 3,500,000.

Unless otherwise stated, all percentages given in this chapter refer to the total number of neuropsychiatric cases considered—69,394. For example, as shown in Chart I, of the total number of neuropsychiatric cases identified in the Army in the United States and available for classification, 21,858, or 31.5 per cent, were of mental deficiency, and 11,443, or 16.5 per cent, were of psychoneuroses. In certain of the tables which have been prepared the statistics established how the different conditions were distributed and, referring to States, for example, the percentage given shows the proportion of any given condition of the total neuropsychiatric conditions found among the residents of the State. As concerns races, the percentage is in reference to the total of neuropsychiatric disorders found among the members of a race, whether American born or foreign born.

From the foregoing statements it is evident that such percentages can not be regarded as indicative of the actual frequency of a condition in the total

number of men examined or in the representatives of either States or races. Further, as concerns the drafted men of the Army, the neuropsychiatric examinations were made only of those men who had been passed by the local examining boards under the provisions of the selective service act.

The number of neuropsychiatric cases found among the quotas which arrived at the camps depended upon the thoroughness of the examination by local boards. The character of the examination varied with different boards, and also at different periods of the mobilization, with the changing orders which were issued from time to time relative to the standards for rejection and classification. In order that one may understand in what degree the number of diagnoses of certain conditions made by the neuropsychiatric officers in camps corresponded with the rate of rejections for the same conditions by the local boards in various States, Table 5 was prepared. This table was compiled from the statistics given in *Defects Found in Drafted Men*,¹ and affords information in respect to a few of the more important clinical groups in which the classification adopted by the Provost Marshal General corresponds with that used herein.

TABLE 5.—*Neuropsychiatric defects noted in the total number of men rejected (549,099) by local boards in the different States. Rates per 1,000*

States	Mental deficiency	Epi- lepsy	Drug addic- tion	Con- stitu- tional psy- cho- pathic states	Alco- hol- ism	States	Mental deficiency	Epi- lepsy	Drug addic- tion	Con- stitu- tional psy- cho- pathic states	Alco- hol- ism
Alabama.....	8.04	1.99	0.05	0.08	-----	New Jersey.....	6.14	2.63	0.20	0.07	0.21
Arizona.....	2.00	.95	.35	.09	-----	New Mexico.....	10.52	2.76	.14	-----	.20
Arkansas.....	6.36	2.58	.01	.07	0.01	New York.....	7.26	3.92	.48	.30	.18
California.....	6.35	3.54	.64	.22	.38	North Carolina.....	14.03	3.72	.05	.04	.01
Colorado.....	6.77	3.27	.20	.07	.07	North Dakota.....	7.61	2.03	.04	.14	.07
Connecticut.....	7.06	4.15	.16	.06	.26	Ohio.....	9.95	3.99	.69	.19	.10
Delaware.....	5.45	1.36	.27	-----	.14	Oklahoma.....	9.24	3.08	.17	.04	.01
District of Columbia.....	7.24	2.78	.07	.28	.14	Oregon.....	6.55	2.40	.04	.04	-----
Florida.....	7.53	2.78	.11	.14	-----	Pennsylvania.....	8.04	3.55	.17	.18	.13
Georgia.....	8.40	2.17	.14	.09	.01	Rhode Island.....	13.44	6.03	1.05	.33	1.18
Idaho.....	4.91	2.12	.06	-----	.06	South Carolina.....	11.18	2.76	.10	.02	.07
Illinois.....	7.01	3.03	.06	.27	.08	South Dakota.....	11.34	.79	-----	.20	-----
Indiana.....	9.51	4.01	-----	.07	.03	Tennessee.....	15.32	3.36	.15	.14	.03
Iowa.....	12.13	3.55	.06	.12	.13	Texas.....	8.42	3.82	.14	.04	-----
Kansas.....	6.93	2.31	.03	.05	.09	Utah.....	5.95	2.50	.31	.38	-----
Kentucky.....	12.54	3.47	.10	.06	.03	Vermont.....	27.13	10.18	.10	.40	.30
Louisiana.....	11.89	3.44	.10	.10	.06	Virginia.....	13.72	4.25	.10	.13	.01
Maine.....	16.75	4.45	.12	.08	.08	Washington.....	6.94	2.96	.49	.04	-----
Maryland.....	20.36	6.03	.23	.64	.14	West Virginia.....	6.84	2.59	.03	.12	-----
Massachusetts.....	8.00	3.74	.09	.14	.39	Wisconsin.....	9.70	2.84	.03	.14	.20
Michigan.....	8.44	2.67	.06	.21	.09	Wyoming.....	2.40	.58	-----	-----	.08
Minnesota.....	9.01	2.53	.16	.11	.09						
Mississippi.....	9.28	2.50	.02	.05	.06						
Missouri.....	9.27	3.49	.15	.12	.23						
Montana.....	2.79	1.74	.05	-----	.03						
Nebraska.....	4.77	1.96	.10	.06	.02						
Nevada.....	2.28	2.07	.21	-----	-----						
New Hampshire.....	7.40	3.58	-----	.15	.23						
						Total United States rate per thousand, draft boards and camps.....	14.45	5.15	.54	.55	.31
						United States average..	8.94	3.29	.16	.15	.13

In general, a low rate of rejections by local boards corresponds with a small number of cases found at the camps. For example, in the examination of men from Florida, the neuropsychiatric distribution average for mental defect was far below that of most of the other Southern States. This might be explained by the Florida local boards being unusually on the alert for mental defect, thus leaving fewer cases to be detected at the camps. Such was not the

case, however, as both local boards and neuropsychiatrists reported a below-average of mental defect in Florida. On the other hand, such correspondence between the findings of the local boards and the neuropsychiatrists was not invariable. For example, Nevada, with a none per thousand local board rejection for alcoholism, showed the highest neuropsychiatric distribution average for alcoholism of any State (see Table 42), although the actual number of cases was small.

The totals in all tables refer to diagnosis exclusively. The diagnoses form the basis of the statistics quite independently of any recommendation or action affecting the status of the soldier. That is, any individual in whom a diagnosis of neuropsychiatric disease was made and reported on Form 90 M. D. (see p. 14) is considered in the discussion which follows, irrespective of whether he was discharged from, or retained in, the Army. In some of the tables herein, in which the information is discussed in detail under subheads, the totals are not always uniform for the reason that in some of the different items the total of information was not constant.

In the consideration of many items, such as family history, preexistence of venereal disease, and alcoholic habits, the information is based upon the answers the enlisted men gave to questions asked them. Whenever possible their statements, especially as to personal history, were verified by correspondence with institutions, family physicians, and relatives. The facts as given are regarded as substantially correct. Drafted men, as a class, seemed truthful; the motives for deception were not strong, and attempts to deceive could generally be foiled. Again, in dealing with such large numbers, misstatements tend to balance. The compilations of the statistics as they became available at different periods were quite uniform. Thus the percentages established when 600,000 men had been examined were practically identical with those which covered the examination of 3,500,000. Throughout, also, there was a remarkable uniformity of the information obtained by the examiners at different stations.

In general it may be said that the present study furnishes many facts hitherto unknown concerning nervous and mental disease and defect occurring in a large group of individuals, or in certain selected smaller groups, all among males of a given age period. The neuropsychiatric disabilities of volunteers and drafted men are compared; of white and colored; of several races, both foreign and native born. Important information is furnished as to the length of service to be expected from men suffering from the different defects; the date of onset of such defects; the family history, age, education, home environment, marital and economic conditions, and alcoholic habits of those under consideration. It must be borne in mind throughout that the cases are discussed as groups and that the facts and conclusions given apply only to the group under consideration.

DISTRIBUTION OF CASES (OFFICERS AND ENLISTED MEN)

The distribution of the cases considered in this series among officers, candidates for commission, and enlisted men is shown in Table 6. Assuming 3,500,000 as the total number examined, it is found that about 20 out of every

1,000 were discovered to have some form of mental or nervous disease or defect. The distribution of the cases among the military personnel was:

Officers.....	533
Candidates for commission.....	587
Enlisted men.....	68, 274
Total.....	69, 394

OFFICERS AND CANDIDATES FOR COMMISSION

It was not possible to make accurate determinations of the number of officers and candidates for commission examined by neuropsychiatrists, except in officers' training camps which were in operation subsequent to the summer of 1917, no routine psychiatric examinations having been prescribed for this class of personnel. The high percentage of defects found among those attending the officers' training camps is startling. These conditions were discovered during the routine examinations conducted at certain of the officers' training camps. A greater number of candidates for commission were eliminated at these few camps by reason of neuropsychiatric disease than among the entire officer personnel throughout the United States. It is certain that if all candidates for commission had been subjected to a thorough neuropsychiatric examination before being accepted many would have been rejected with advantage to the military service. It was probably the outstanding defect of the neuropsychiatric service during the war that so many individuals were commissioned and given positions of military responsibility without a determination of their mental and nervous fitness therefor.

TABLE 6.—*Diagnoses of nervous and mental diseases and defects among commissioned officers, candidates for commission, and enlisted men*

Diagnoses	Total	White				Colored, total
		Total	Commissioned officers	Candidates for commission	Enlisted men	
Mental deficiency.....	21, 858	17, 803		7	17, 796	4, 055
Imbecile.....	6, 817	4, 881			4, 881	1, 936
Moron.....	13, 242	11, 215		7	11, 208	2, 027
Border-line condition.....	880	846			846	34
Degree not determined.....	919	861			861	58
Psychoneuroses.....	11, 443	10, 343	166	124	10, 053	1, 100
Anxiety neuroses.....	89	88	3	1	84	1
Angioneuroedema.....	3	3	1		2	
Compulsion neurosis.....	2	2				
Enuresis.....	497	466	1		465	31
Hysteria.....	3, 648	3, 220	22	18	3, 180	428
Migraine.....	181	178	1		175	3
Neurasthenia.....	3, 982	3, 800	90	51	3, 659	182
Psychasthenia.....	1, 118	1, 079	40	19	1, 020	39
Stammering.....	1, 343	993		2	991	350
Traumatic neurosis.....	219	175	1		174	44
Undiagnosed.....	361	339	7	31	301	22

TABLE 6.—*Diagnoses of nervous and mental diseases and defects among commissioned officers, candidates for commission, and enlisted men—Continued*

Diagnoses	Total	White				Colored, total
		Total	Commissioned officers	Candidates for commission	Enlisted men	
Psychoses.....	7,910	7,354	148	71	7,135	556
Traumatic.....	51	38	1	—	37	13
Senile.....	12	12	7	—	5	—
With cerebral arteriosclerosis.....	4	4	2	1	1	—
General paralysis.....	530	487	17	12	458	43
With cerebral syphilis.....	44	33	2	2	29	11
With Huntington's chorea.....	1	1	—	—	1	—
With brain tumor.....	1	1	—	—	1	—
With other brain or nervous diseases.....	2	2	—	—	2	—
Alcoholic.....	292	287	4	—	283	5
Drug and toxic.....	45	36	2	2	32	9
With pellagra.....	37	33	—	—	33	4
With other somatic diseases.....	109	92	8	3	81	17
Manic-depressive.....	1,385	1,304	64	26	1,214	81
Involuntary melancholia.....	3	3	2	—	1	—
Dementia præcox.....	4,738	4,433	24	15	4,394	305
Paranoia and paranoid conditions.....	52	48	3	1	44	4
With mental deficiency.....	113	100	—	—	100	13
With constitutional psychopathic inferiority.....	66	64	—	7	57	2
Epileptic.....	131	112	—	—	112	19
Undiagnosed.....	294	264	12	2	250	30
Nervous diseases and injuries.....	6,916	6,116	100	147	5,869	800
Arteriosclerosis.....	41	41	10	14	17	—
Ataxia:						
(a) Friedreich's.....	4	4	—	—	4	—
(b) Marie's.....	4	4	—	—	4	—
Atrophy.....	55	52	—	2	50	3
Beriberi.....	1	1	—	—	1	—
Brain:						
Abscess of.....	9	8	—	—	8	1
Tumor of.....	27	27	1	—	26	—
Chorea.....	264	252	—	—	252	12
Combined sclerosis.....	3	3	—	—	3	—
Dercum's disease.....	1	1	—	—	1	—
Ear disease.....	2	2	—	1	1	—
Erythromelalgia.....	1	1	—	—	1	—
Hemiplegia.....	258	210	5	2	203	48
Hematomyelia.....	3	3	—	—	3	—
Hemorrhage, cerebral.....	17	16	1	—	15	1
Herpes zoster.....	2	2	—	—	2	—
Hydrocephalus.....	13	12	—	—	12	1
Injury:						
(a) Brain.....	337	245	3	2	240	92
(b) Spinal cord.....	39	33	1	—	32	6
(c) Peripheral nerve.....	178	150	3	—	147	28
Lateral sclerosis.....	24	21	—	—	21	3
Little's disease.....	2	2	—	—	2	—
Ménière's disease.....	3	3	—	—	3	—
Meningitis.....	279	242	2	1	239	37
Multiple sclerosis.....	511	483	4	3	476	28
Myasthenia gravis.....	4	4	—	—	4	—
Myelitis.....	32	27	—	—	27	5
Myotonia congenita.....	17	17	—	—	17	—
Neuralgia.....	5	4	—	—	4	1
Neuritis.....	222	213	6	—	207	9
Neurofibromatosis.....	3	3	—	—	3	—
Paralysis agitans.....	18	16	—	—	16	2
Paramyoclonus multiplex.....	3	3	—	—	3	—
Paralysis.....	340	282	3	2	277	58
Paraplegia.....	34	28	1	—	27	6
Pes planus.....	23	22	—	—	22	1
Plumbism.....	13	12	—	—	12	1
Poliomyelitis.....	211	191	4	1	186	20
Progressive muscular atrophy.....	61	58	1	1	56	3
Progressive muscular dystrophy.....	15	14	—	—	14	1
Radiculitis.....	1	1	—	—	1	—
Retinitis.....	1	1	—	—	1	—
Raynaud's disease.....	8	8	—	—	8	—
Sciatica.....	137	127	5	—	122	10
Syphilis C. N. S.....	2,462	2,161	26	50	2,085	301
Syringomyelia.....	17	16	—	—	16	1
Tabes dorsalis.....	333	294	11	27	256	39
Tetanus.....	2	2	—	—	2	—
Tetany.....	1	—	—	—	—	1
Thrombosis cerebral.....	5	4	—	—	4	1
Tics.....	200	183	1	6	176	17
Torticollis.....	34	27	—	1	26	7
Tremor.....	243	212	—	4	208	31
Vagatonia.....	16	16	—	1	15	—
Undiagnosed.....	377	352	12	29	311	25

TABLE 6.—*Diagnoses of nervous and mental diseases and defects among commissioned officers, candidates for commission, and enlisted men—Continued*

Diagnoses	Total	White				Colored, total
		Total	Commissioned officers	Candidates for commission	Enlisted men	
Epilepsy.....	6,388	5,273	9	14	5,250	1,115
Constitutional psychopathic states.....	6,196	5,941	65	168	5,708	255
Criminalism.....	323	306	1	—	305	17
Emotional instability.....	1,915	1,835	21	75	1,739	80
Inadequate personality.....	2,594	2,500	21	33	2,446	94
Nomadism.....	28	28	—	—	28	—
Paranoid personality.....	388	378	9	9	360	10
Pathological liar.....	28	27	1	—	26	1
Sexual psychopathy.....	190	171	2	4	165	19
Undiagnosed.....	730	696	10	47	639	34
Endocrinopathies.....	4,805	4,506	17	52	4,437	299
(a) Achondroplasia.....	2	2	—	—	2	—
(b) Adrenal.....	6	6	—	—	6	—
(c) Gonad.....	16	15	—	—	15	1
(d) Neurocirculatory asthenia.....	50	35	—	—	35	15
(e) Pituitary.....	205	186	—	2	184	19
(f) Thyroid.....	4,501	4,239	17	50	4,172	262
(g) Polyglandular.....	25	23	—	—	23	2
Drug addiction.....	2,020	1,823	20	—	1,803	197
Alcoholism.....	1,858	1,834	8	1	1,825	24
Grand total.....	69,394	60,993	533	584	59,876	* 8,401

* All enlisted men except 3, who were members of the Officers' Training Corps.

	RATIO PER 1000 MEN	5	10	15	20	25
VOLUNTEERS FOR SECOND O.T.C.	27					
VOLUNTEER RECRUITS	25					
DRAFTED RECRUITS	17					

CHART II.—Ratio of neuropsychiatric cases found among volunteers and drafted men examined by neuropsychiatrists

ENLISTED MEN

The predominance of mental and nervous defects among men who volunteered as compared with those who were drafted is shown in Table 7 and Chart II. The cases considered were collected from reports which showed definitely the number of men examined in each of the groups referred to, and how many of these had neuropsychiatric defects. While the number here considered is far less than the total, the results are regarded as typical for the entire series. In this connection it is noteworthy that many neuropsychiatric patients who might otherwise have entered through the draft had already been sifted out by the local board examinations. No such preliminary elimination had occurred among those enlisting voluntarily.

Table 7 also shows the distribution of neuropsychiatric disorders among volunteers to be different from that in the Army as a whole. Those applying for voluntary enlistment show proportionately fewer mental defectives and drug addicts, and many more alcoholics.

TABLE 7.—*Neuropsychiatric cases found among volunteers at recruit depots, and drafted men, by clinical groups*

	Number of neuropsychiatric cases								
	Number of men examined	Total cases	Mental deficiency	Psycho-neuroses	Psychoses	Nervous diseases or injuries	Constitutional psychopathic states	Drug addiction	Alcoholism
Volunteer recruits.....	81,881	2,066	413	108	138	682	232	480	13
Drafted men.....	626,825	10,812	3,952	1,681	453	3,356	750	99	521
Total.....	708,706	12,878	4,365	1,789	591	4,038	982	579	534

METHODS OF DISCOVERING CASES

The neuropsychiatric cases which comprise the present series came under the observation of the neuropsychiatrist through five sources (Table 8): (1) During the routine examination of all men on their arrival at a mobilization camp; (2) reference by other medical officers; (3) reference by commanding officers of organizations; (4) reference by psychologists; (5) reference by a court-martial or in connection with delinquency.

More cases were detected by the neuropsychiatrists during the preliminary physical examination than in any other manner, 27,836 cases, or 40.1 per cent of the total number reported, having been discovered in this way. Cases referred by other medical officers are regarded as consultation cases.

The cooperation of line officers was generally secured through talks given to them by the neuropsychiatrists. Their attention was invited to those particular traits which might indicate mental abnormality; and they were requested to refer to neuropsychiatrists, men in whom such characteristics were noted, for special examination. The success attending these efforts is indicated in the 16,336 positive cases which came to light through this channel.

One of the striking features of Chart III is the small number of cases reported as referred by the psychologists. Several explanations may be offered for this. As the psychological group examinations were conducted after the physical examinations were completed the greater number of cases of mental deficiency were discovered before the psychological examination began. Another explanation is, that many of the soldiers who received low grades in the psychological tests were sent to the development battalions where they were given an opportunity to display their ability. If their service was unsatisfactory they were later referred to the neuropsychiatrists by the commanding officers or surgeons of the organizations to which attached. Final recommendations in such cases were made, not alone upon failure to be placed in a particular psychological group, but upon failure to get along properly under training as well.

Whenever possible a psychologist was assigned to duty with the neuropsychiatric board for the purpose of conducting individual psychological examinations of men referred to them by the neuropsychiatrists. Their services were highly esteemed. Psychological ratings were thereby established, and the time of medical officers was economized.

TABLE 8.—Methods of discovering neuropsychiatric cases

Diagnoses	White								Colored							
	Total	Total	Routine exami- nations	Consultations with other medical of- ficers	Referred by—			Unascertained	Total	Routine exami- nation	Consultation with other medical of- ficers	Referred by—			Unascertained	
					Commanding officers	Psychologists	Courts					Commanding officers	Psychologists	Courts		
Mental deficiency.....	21,858	17,803	7,271	5,046	4,525	294	78	589	4,055	1,704	861	943	467	4	76	
Psychoneuroses.....	11,443	10,343	3,540	3,882	2,594	38	12	277	1,100	521	330	232	7	---	10	
Psychoses.....	7,910	7,354	1,907	3,164	1,942	25	47	269	556	181	201	156	3	6	9	
General paralysis.....	530	487	208	171	78	1	5	24	43	22	14	7	---	---	---	
Alcoholic.....	292	287	71	144	57	1	3	11	5	1	1	3	---	---	---	
Manic-depressive.....	1,385	1,304	345	619	287	3	7	43	81	22	31	27	---	---	1	
Dementia præcox.....	4,738	4,433	1,047	1,839	1,364	17	24	142	305	106	103	82	3	5	6	
Epileptic.....	131	112	39	46	15	---	2	10	19	5	8	6	---	---	---	
Other forms.....	834	731	197	345	141	3	6	39	103	25	44	31	---	1	2	
Nervous diseases and injuries.....	6,916	6,116	2,760	2,082	1,021	24	1	228	800	387	242	141	5	---	25	
Chorea.....	264	252	98	89	57	2	1	5	12	5	4	2	---	---	1	
Hemiplegia.....	258	210	89	70	43	---	---	---	8	48	23	10	13	---	2	
Injuries to nervous system.....	554	428	182	143	78	4	---	---	21	126	47	36	30	---	13	
Meningitis.....	279	242	83	115	41	---	---	3	37	24	12	7	---	---	---	
Multiple sclerosis.....	511	483	295	116	62	---	---	10	28	16	5	7	---	---	---	
Neuritis.....	222	213	37	121	47	---	---	8	9	1	7	1	---	---	---	
Paralysis.....	340	282	103	109	56	2	---	12	58	28	22	8	---	---	---	
Poliomyelitis.....	211	191	114	55	14	3	---	4	20	17	3	---	---	---	---	
Sciatica.....	137	127	15	89	21	---	---	2	10	2	2	6	---	---	---	
Syphilis C. N. S.....	2,462	2,161	1,115	656	329	5	---	56	301	153	93	47	4	---	4	
Tabes dorsalis.....	333	294	151	80	37	1	---	25	39	19	14	6	---	---	---	
Tic.....	200	183	78	64	30	---	---	11	17	6	5	5	---	---	1	
Tremor.....	243	212	97	69	36	2	---	8	31	20	5	4	1	---	1	
Other forms.....	902	838	303	305	170	5	---	55	64	26	24	11	---	---	3	
Epilepsy.....	6,388	5,273	1,569	2,083	1,411	14	7	189	1,115	394	457	249	8	---	7	
Constitutional psychopathic states.....	6,196	5,941	2,376	1,428	1,820	25	63	229	255	116	53	75	1	1	9	
Endocrinopathies.....	4,805	4,506	2,901	910	559	20	1	115	299	205	45	46	3	---	---	
Drug addiction.....	2,020	1,823	763	575	422	---	11	52	197	82	73	38	2	---	2	
Alcoholism.....	1,858	1,834	1,143	482	160	---	---	5	44	24	16	6	---	---	---	
Total.....	69,394	60,993	24,230	19,652	14,454	440	225	1,992	8,401	3,606	2,268	1,882	496	11	138	

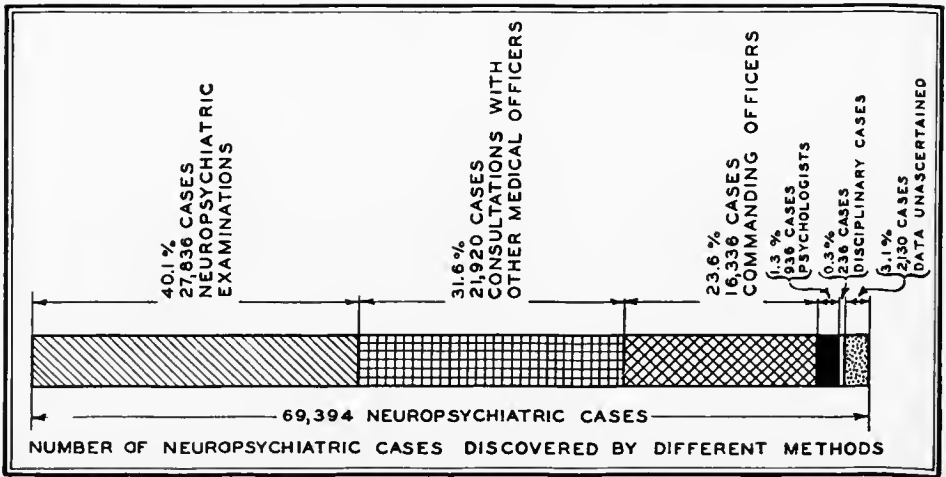


CHART III

DELINQUENCY

The number of cases brought to the attention of neuropsychiatric examiners by reason of misconduct was small. Out of the total of 69,394 neuropsychiatric cases there were only 1,498 (see Chart IV) which were referred by reason of delinquency. So small a representation of misconduct from a group of disorders of which the symptoms are primarily behavioristic contradicts civil experience. This contradiction may be interpreted in two ways. The first is that at the entrance examinations the neuropsychiatric officers detected most of the mentally irresponsible who were likely to turn out to be "bad actors," and succeeded in having them kept out of the Army. Such an interpretation is borne out by the unexpectedly low delinquency rate reported throughout the Army, both in this country and overseas. But even this interpretation

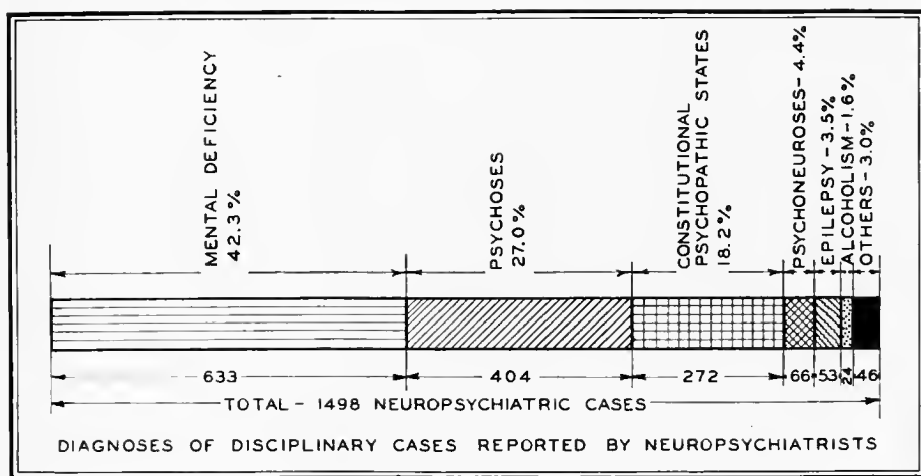


CHART IV

does not altogether account for the low delinquency rate found among the neuropsychiatric cases. The conclusion can not be avoided that more misconduct cases would have been identified had there been a more thorough neuropsychiatric examination of all offenders prior to their trials by courts-martial. Such a view is borne out by the fact that of the 1,498 cases of misconduct, 575, or more than one-third, were reported from the Fort Leavenworth Disciplinary Barracks. In other words, the true nature of one-third of these cases was recognized, not as it should have been, at the point where the offense was committed, but at the point to which the individual had been sent after court-martial, for reformation or punishment.

With only 923 reported from all mobilized troops, it is evident from all previous experience with delinquency and mental irresponsibility, that many irresponsible soldiers were treated as delinquents.

TABLE 9.—*Delinquency cases in each clinical group*

Clinical groups	Number of neuro-psychiatric cases	Number of delinquent	Per cent delinquent	Clinical groups	Number of neuro-psychiatric cases	Number of delinquent	Per cent delinquent
Psychoses.....	7,910	404	5.1	Epilepsy.....	6,388	53	0.8
Constitutional psychopathic states.....	6,196	272	4.4	Psychoneuroses.....	11,443	66	.6
Mental deficiency.....	21,858	633	2.9	Nervous diseases and injuries.....	6,916	19	.3
Alcoholism.....	1,858	24	1.3	Endocrinopathies.....	4,805	6	.1
Drug addiction.....	2,020	21	1.0	Total.....	69,394	1,498	2.2

CLINICAL CLASSIFICATION

The neuropsychiatric examiners were instructed by the Surgeon General to use the following diagnostic terms in reference to classification:*

CLASSIFICATION OF DISEASES, INJURIES AND DEFECTS

I. Mental deficiency:

- Imbecile.
- Moron.
- Border-line condition.

II. Psychoneuroses:

- Enuresis.
- Hysteria.
- Neurasthenia.
- Psychasthenia.
- Stammering.
- Other forms (specify).
- Undiagnosed.

III. Psychoses:

In designating the mental disease on the statistical card, the group and type of the psychosis will be given whenever possible.

1. Traumatic psychoses.
2. Senile psychoses.
3. Psychoses with cerebral arteriosclerosis.
4. General paralysis.
5. Psychoses with cerebral syphilis.
6. Psychoses with Huntington's chorea.
7. Psychoses with brain tumor.
8. Psychoses with other brain or nervous diseases (specify when possible).
9. Alcoholic psychoses.
 - (a) Pathological intoxication.
 - (b) Delirium tremens.
 - (c) Acute hallucinosis.
 - (d) Korsakow's psychosis.
 - (e) Chronic paranoid type.
 - (f) Other types, acute or chronic.
10. Psychoses due to drugs and other exogenous toxins.
 - (a) Morphine, cocaine, bromides, chloral, etc., alone or combined (to be specified).
 - (b) Metals, as lead, arsenic, etc. (to be specified).
 - (c) Gases (to be specified).
 - (d) Other exogenous toxins (to be specified).
11. Psychoses with pellagra.

* The classification of mental diseases is the one adopted in May, 1917, by the American Medico-Psychological Association, now the American Psychiatric Association.

III. Psychoses—Continued.

12. Psychoses with other somatic diseases (specify disease).
13. Manic-depressive psychoses.
 - (a) Manic type.
 - (b) Depressive type.
 - (c) Stupor.
 - (d) Mixed type.
 - (e) Circular type.
14. Involution melaneholia.
15. Dementia præcox.
 - (a) Paranoid type.
 - (b) Catatonic type.
 - (c) Hebephrenie type.
 - (d) Simple type.
16. Paranoia and paranoid conditions.
17. Psychoses with mental deficiency.
18. Psychoses with constitutional psychopathic inferiority.
19. Epileptic psychoses.
20. Undiagnosed psychoses.

IV. Nervous diseases and injuries:

Abscess—

- Brain (specify location).
- Spinal cord (specify location).

Arteriosclerosis—

- Cerebral.
- General.
- Spinal.

Beriberi.

Bulbar palsy.

Chorea.

Combined sclerosis.

Ear disease.

Embolism and thrombosis.

Eye diseases.

Facial palsy.

Hemorrhage (specify location).

Herpes zoster.

Hydrocephalus.

Injury (specify kind)—

- Brain (specify location).
- Spinal cord (specify location).
- Peripheral nerve (specify nerve).
- Lateral sclerosis.
- Lumbago.
- Ménière's disease.
- Meningitis—
 - Cerebrospinal.
 - Tuberculous.
 - Other forms (specify).

Migraine.

Multiple sclerosis (disseminated sclerosis).

Myasthenia gravis.

Myelitis—

- Transverse.
- Traumatic.

Myotonia congenita (Thomsen's disease).

Neuralgia (specify nerve).

IV. Nervous diseases and injuries—Continued.

Injury (specify kind)—Continued.

Neuritis (specify nerve)—

Diphtheritic.

Multiple—

Alcoholic.

Traumatic.

Other forms.

Pachymeningitis cervicalis.

Paralysis agitans.

Paramyoclonus multiplex.

Pes planus.

Plumbism.

Poliomyelitis.

Progressive muscular atrophy.

Progressive muscular dystrophies.

Sciatica.

Syphilis of central nervous system.

Syringomyelia.

Tabes dorsalis (locomotor ataxia).

Tics.

Torticollis.

Tremor—

Chronic progressive.

Brain (specify location).

Spinal cord.

Peripheral nerve (specify nerve).

Vagotonia.

Undiagnosed.

Conditions secondary to other diseases—

Aphasia.

Bulbar syndrome.

Hemiplegia.

Jackson's syndrome.

Optic atrophy.

Paraplegia.

V. Constitutional psychopathic states:

Criminalism.

Emotional instability.

Inadequate personality.

Nomadism.

Paranoid.

Pathological liar.

Sexual psychopathy.

Other forms (specify).

Undiagnosed.

VI. Epilepsy:

Idiopathic.

Jacksonian.

VII. Endocrinopathies:

Achondroplasia.

Adrenal.

Gonad.

Neurocirculatory asthenia.

Pituitary.

Polyglandular.

VIII. Drug addiction.

IX. Alcoholism.

The number of cases concerned was so large that the assembled material may be accepted as representing every variety of nervous and mental disease or defect occurring in men in the given age period in the United States. Larger collections of statistics concerning individual conditions exist, but none dealing with the whole subject of neuropsychiatry are known which parallel the present series. They furnish a complete compilation, not only of disorders which affect conduct primarily, such as the psychoses and the constitutional psychopathic states, but also the organic and functional disorders which affect the nervous system in structure and function.

To divide the diagnoses into distinct groups was not difficult, and it is believed that the several groups represent essentially different conditions, not only in regard to origin, but also as to characteristics, management, and other factors. The fringes of each group overlap, observable especially in the merging into each other of such conditions as are without definite physical symptoms. Under such circumstances the diagnosis and group assignment were made on the basis of the major disability. There was some question as to the proper group assignment of the 292 cases of alcoholic psychoses. (See Table 6.) These disorders, being induced by alcohol, belong to the alcoholism group, but any discussion of the psychoses must also include them. So they belong to both groups. They are counted with the psychoses in the general clinical classification and in the tables; but in the itemized information concerning the psychoses and alcoholism, they appear in both places. Similarly there were placed under psychoses 45 cases of "drug and other toxic psychoses." Of these no further account is made. The numbers finally placed in each group are shown in Table 6. The order of arrangement established in Table 6 is the order followed throughout this chapter.

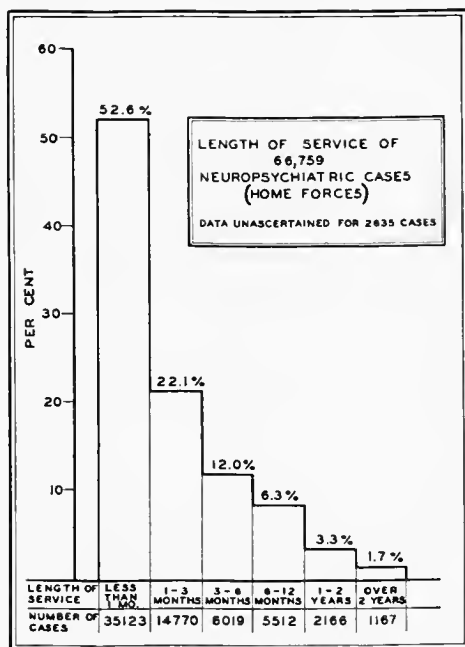


CHART V

LENGTH OF SERVICE

The neuropsychiatric examinations, except those made of the men of the first draft and the men in the National Guard and the Regular Army, were conducted eventually as a part of the routine physical examination given the men upon arrival at a mobilization camp. As a result of this system, most of the individuals who were rejected left the service before the Government had proceeded to any great length with their military training. Information as to how long the men of this series were in service prior to discovery was obtained

for all but 2,635 cases. (Chart V.) Of the number for which the data were obtained, 52.6 per cent of all cases were discovered before they had been in the service one month, and 74.7 per cent were discovered before they had been in the Army three months, 86.7 per cent of all cases were identified before the expiration of six months, which was the average training period before men went overseas.

The period of service for the entire group of cases would have been reduced considerably if the final perfected system of conducting neuropsychiatric examinations had been in operation at the time the first draft went to camp. The men who were not examined immediately were given neuropsychiatric examinations by special boards after their training was started; in some instances the delay reached three months. Eliminating the cases found in this delayed group, which numbered about 13,000, the conclusion that most neuropsychiatric cases can be found by experienced neuropsychiatrists in one month does not seem to be unreasonable.

TABLE 10.—*Length of service of neuropsychiatric cases prior to discovery*

Diagnoses	Total	White						
		Total	Under 1 month	1 to 3 months	4 to 6 months	7 to 12 months	Over 1 year to 2 years	Over 2 years
Mental deficiency.....	21,858	17,803	9,212	3,753	2,178	1,320	377	99
Psychoneuroses.....	11,443	10,343	4,516	2,510	1,403	1,039	411	209
Psychoses.....	7,910	7,354	2,522	1,773	1,099	895	435	293
General paralysis.....	530	487	299	56	38	28	9	42
Alcoholic.....	292	287	163	42	11	23	20	17
Manic-depressive.....	1,385	1,304	445	315	186	161	78	66
Dementia praecox.....	4,738	4,433	1,352	1,146	741	592	271	123
Epileptic.....	131	112	44	34	11	9	4	5
Other forms.....	834	731	219	180	112	82	53	40
Nervous diseases and injuries.....	6,916	6,116	3,312	1,114	554	500	214	185
Chorea.....	264	252	137	51	21	29	4	2
Hemiplegia.....	258	210	118	40	22	16	2	6
Injury to nervous system.....	554	428	226	73	51	37	18	12
Meningitis.....	279	242	77	37	34	54	31	3
Multiple sclerosis.....	511	483	313	76	36	26	10	11
Neuritis.....	222	213	62	54	35	32	15	8
Paralysis.....	340	282	146	68	29	16	11	6
Polio-myelitis.....	211	191	129	31	15	10	2	3
Sciatica.....	137	127	34	31	19	17	7	12
Syphilis C. N. S.....	2,462	2,161	1,199	356	169	175	67	87
Tuberc dorsalis.....	333	294	191	39	12	18	6	13
Tic.....	200	183	95	48	17	8	4	1
Tremor.....	243	212	155	31	13	3	1	3
Other forms.....	902	838	430	179	81	59	36	18
Epilepsy.....	6,388	5,273	2,624	1,363	548	343	145	65
Constitutional psychopathic states.....	6,196	5,941	2,246	1,484	908	701	294	133
Endocrinopathies.....	4,805	4,506	2,994	722	354	227	95	27
Drug addiction.....	2,020	1,823	1,165	254	139	74	41	28
Alcoholism.....	1,858	1,834	1,287	101	102	106	90	68
Total.....	69,394	60,993	29,878	13,074	7,285	5,205	2,102	1,107

TABLE 10.—*Length of service of neuropsychiatric causes prior to discovery*—Continued

Diagnoses	Colored							
	Total	Under 1 month	1 to 3 months	4 to 6 months	7 to 12 months	Over 1 year to 2 years	Over 2 years	Un-ascertained
Mental deficiency.....	4,055	2,496	781	438	120	29	19	172
Psychoneuroses.....	1,100	688	233	85	49	12	6	27
Psychoses.....	556	249	177	47	43	8	14	18
General paralysis.....	43	22	13	2	1	1	4	—
Alcoholic.....	5	4	1	—	—	—	—	—
Manic-depressive.....	81	35	28	7	6	1	1	3
Dementia præcox.....	305	138	90	28	31	5	6	7
Epileptic.....	19	8	7	3	—	—	1	—
Other forms.....	103	42	38	7	5	1	2	8
Nervous diseases and injuries.....	800	520	122	64	43	11	13	27
Chorea.....	12	11	—	1	—	—	—	—
Hemiplegia.....	48	36	8	1	—	—	1	2
Injury to nervous system.....	126	80	23	8	6	—	—	9
Meningitis.....	37	26	2	3	5	1	—	—
Multiple sclerosis.....	28	19	6	3	—	—	—	—
Neuritis.....	9	2	3	3	—	1	—	—
Paralysis.....	58	41	9	2	2	1	1	2
Poliomyelitis.....	20	15	2	—	2	—	—	1
Sciatica.....	10	5	1	3	—	—	—	1
Syphilis C. N. S.....	301	182	47	25	23	7	9	8
Tabes dorsalis.....	39	26	7	2	2	—	1	1
Tic.....	17	13	2	1	—	—	—	1
Tremor.....	31	25	3	—	2	—	1	—
Other forms.....	64	39	9	12	1	1	—	2
Epilepsy.....	1,115	713	267	74	30	3	1	27
Constitutional psychopathic states.....	255	151	59	22	14	2	3	4
Endocrinopathies.....	299	241	39	3	7	1	—	8
Drug addiction.....	197	167	16	1	—	—	3	10
Alcoholism.....	24	20	2	—	1	—	1	—
Total.....	8,401	5,245	1,696	734	307	66	60	293

LINE OF DUTY

It appears, as far as the determination by medical officers is concerned, that 96.1 per cent of the cases discovered did not have a disability which arose in line of duty; that is, the disability was not due to service in the Army. In only 2.8 per cent was "in line of duty" established. (See Table 11.)

As most of the cases were considered as "not in line of duty" the date of onset of the disease is of little importance from a military point of view, but the records contain important clinical data, especially as to the essential chronicity of nervous and mental disorders.

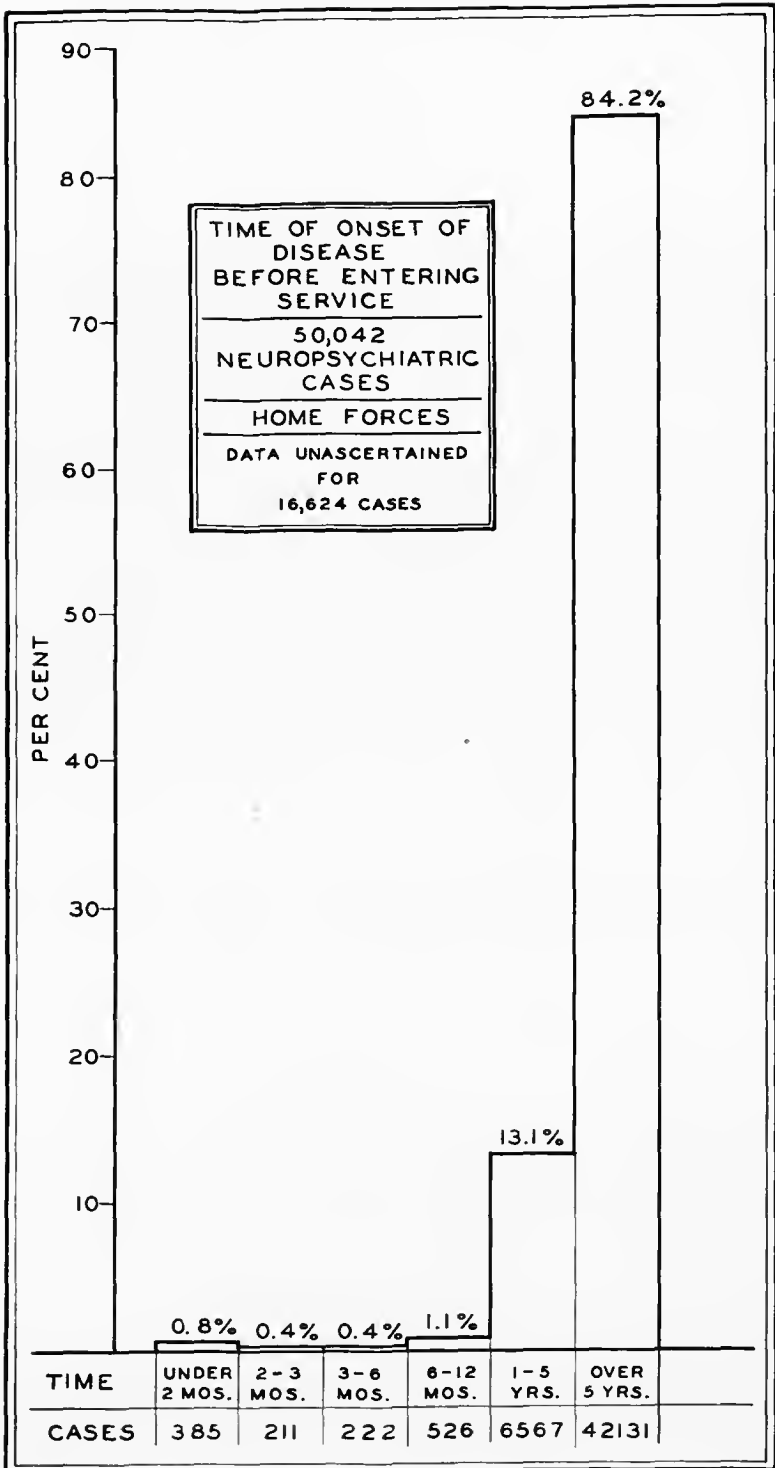


CHART VI

TABLE 11.—Time of onset of neuropsychiatric disorders—line of duty

IN THE UNITED STATES

173

Diagnoses	White															
	(Grand total)	Not in line of duty							In line of duty							
		Time of onset prior to entering service							Time of onset after entering service							
		Total	Under 2 months	2 to 3 months	4 to 5 months	6 months to 1 year	Over 1 year	Unascertained	Total	Under 2 months	2 to 3 months	4 to 5 months	6 to 12 months	1 to 5 years	Over 5 years	Unascertained
Mental deficiency	21,858	17,803	80	51	73	131	1,463	17,803	3,622	531	65	85	91	94	32	99
Psychoneuroses	11,443	10,343						4,225								
Psychoses	7,910	7,354	177	69	62	117	957	1,864	3,243	668	82	102	68	103	39	173
General paralysis	530	487	3	2	2	8	60	109	281	8					1	3
Alcoholic	287	270	27	18	1	10	39	50	141	6	2	1			3	14
Manic-depressive	1,365	1,304	59	18	14	23	163	249	544	181	23	20	14	37	16	33
Dementia praecox	4,738	4,433	74	43	36	60	592	1,244	1,979	305	35	54	33	45	37	110
Epileptic	131	112	106				2	44	50	1						5
Other forms	834	731	14	4	9	16	81	138	248	167	22	27	21	18	6	52
Nervous diseases and injuries	6,916	5,478	43	45	29	12	944	1,990	2,315	513	80	116	83	106	50	62
Chorea	264	252						134	77	10	2	1	2	5		2
Hemiplegia	258	210	3		1	3	25	42	95	40	4	5	2	4	4	1
Injuries to nervous system	554	428	6	4	3	12	46	169	72	56	8	10	9	7	4	10
Meningitis	270	242	6	2	1	4	33	54	23	118	21	33	25	26	5	8
Multiple sclerosis	511	483	2	5	3	7	78	136	245	7	1	1	2	1	1	7
Neuritis	222	213	2	5	3	7	23	29	39	100	22	26	12	18	2	8
Paralysis	340	282	20	8	4	2	8	42	61	66	8	21	8	18	6	7
Polymyositis	211	191	182	1	1	16	127	37	7	1	1	2	6	1	2	2
Sciatica	137	127	100	1	2	5	29	39	23	27	4	4	2	2	2	2
Syphilis C. N. S.	2,462	2,161	10	18	7	34	353	527	1,166	15					1	10
Tuberc dorsalis	233	204	1	1		5	46	66	163	2	1					5
Tetanus	200	183	175	1	1	1	19	114	40	3	1					6
Tremor	243	212	204	1	9	3	38	121	41	2	2				1	29
Other forms	902	838	6	9	9	19	104	285	288	79	8	15	13	16	9	18
Epilepsy	6,388	5,273	13	8	11	32	802	2,700	1,540	46	4	1	3	9	4	10
Constitutional psychopathic states	6,196	5,041	23	3	18	212	3,045	1,950	27	5	2	3	3	6	1	7
Endocrinopathies	4,805	4,506	4	11	9	38	847	1,708	1,817	33	9	1	2	7	8	16
Drug addiction	2,020	1,823	1,807	7	3	5	431	1,030	327							21
Alcoholism	1,858	1,834	11	2	11	14	134	811	825	5				1	2	1
Total	69,394	60,993	356	196	201	467	5,790	35,736	15,639	1,823	245	307	224	318	94	357

TABLE 11.—*Time of onset of neuropsychiatric disorders—line of duty—Continued*

Diagnoses	Colored															
	Total	Not in line of duty						In line of duty								
		Time of onset prior to entering service						Total	Time of onset after entering service							
		Under 2 months	2 to 3 months	4 to 5 months	6 to 12 months	1 to 5 years	Over 5 years		Unas- cer- tained	Under 2 months	2 to 3 months	4 to 5 months	6 to 12 months	1 to 5 years	Over 5 years	Unas- cer- tained
Mental deficiency.....	4,055							4,055								
Psychoneuroses.....	1,100	1,071	10	6	4	16	177	668	190	25	9	5	3	2	1	4
Psychoses.....	556	508	7	2	1	14	95	147	242	44	10	7	6	2	1	16
General paralysis.....	43	42	1			1	9	9	22	1						1
Alcoholic.....	5	4	1				1		2	1						
Manic-depressive.....	81	76	2			3	9	21	39	5	1					3
Dementia praecox.....	305	288	2	2	1	7	50	87	141	14	2	2	3	1	1	4
Epileptic.....	19	19				2	4	5	8							3
Other forms.....	103	79	1			1	22	25	30	23	7	4	3	1	8	1
Nervous diseases and injuries.....	800	762	12	5	10	19	209	323	184	35	6	13	4	7	1	3
Chorea.....	12	12						10	1							
Hemiplegia.....	48	47	2				19	21	5	1						
Injuries to nervous system.....	126	121	3		4	6	49	46	13	3		2		1		
Meningitis.....	37	29	2		1	1	10	15	8	1	1	4	1			
Multiple sclerosis.....	28	28				1	13	9	5							2
Neuritis.....	9	4				1	2	1		5	1	2	1	1		
Paralysis.....	58	51	1	3	3	2	14	23	7	7	3	2	1	1		1
Polioomyelitis.....	20	18			1	1	4	12	2	2			1	1		
Sciatica.....	10	10				2	3	4	1							
Syphilis C. N. S.....	301	301	2		2	4	73	107	113							
Tubes dorsalis.....	39	39					7	15	17							
Tic.....	17	16					2	13	1	1		1				
Tremor.....	31	30		1	1		6	16	7							
Other forms.....	64	56	2	1		1	6	31	15	7	1	2	2	1	1	1
Epilepsy.....	1,115	1,111		1	6	6	163	752	183	3	1	1				1
Constitutional psychopathic states.....	255	255					12	154	89							1
Endocrinopathies.....	299	299		1		3	86	164	45							
Drug addiction.....	197	196				1	34	117	44							1
Alcoholism.....	24	24					1	15	8							
Total.....	8,401	8,281	29	15	21	59	777	6,395	985	107	26	26	13	14	5	22
															1	13

RECOMMENDATIONS OF PSYCHIATRISTS AND DISPOSITION OF CASES

Table 12 gives in detail the final disposition of the cases. Ninety-nine deaths were reported; 27 cases were absent without leave. These 126 cases

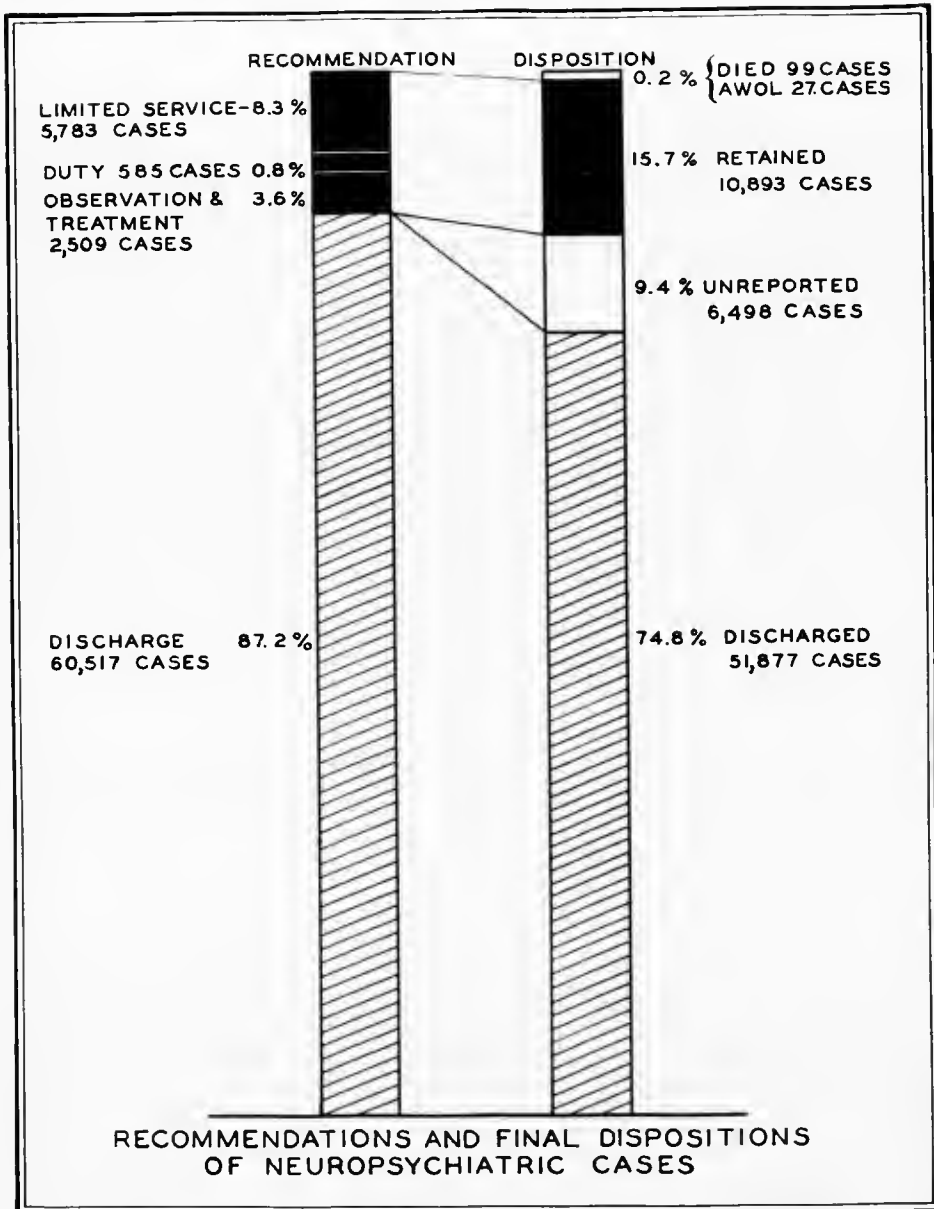


CHART VII

and the 10,893 cases represented as retained include 2,142 more cases than the number recommended for retention. Adding these 2,142 cases to the 6,498 (unreported) cases upon which no action was taken, it seems probable that

8,640 cases were retained which were at one time recommended for discharge by the neuropsychiatrists. In other words, 8,640 cases of nervous and mental diseases discovered in the United States were retained in the service while, in the opinion of neuropsychiatric officers, they should have been separated from it.

Some light as to the wisdom of retaining cases of nervous and mental diseases in the Army, especially among troops destined to go overseas, is shown by the statistics of the nervous and mental cases reported from France.

Between the dates of January 1, 1918, and July 1, 1919, the total number of cases of nervous and mental disease occurring in France and evacuated home, passed through General Hospital No. 214, A. E. F.² The total number of them was 8,772, which is close correspondence between the number that the neuropsychiatrists had recommended unavailingly to be prohibited from going to France. These figures do not include the cases which were treated in hospitals and returned to duty.

TABLE 12.—*Recommendations and final disposition of neuropsychiatric cases*

Diagnoses	Total	White									
		Recommendations					Disposition				
		Total	Dis-charge	Duty	Treat-ment	Limited serv-ice	Died	Dis-charged	Re-tained	Absent without official leave	Un-reported
Mental deficiency.....	21,858	17,803	15,419	194	66	2,124	6	13,232	2,873	8	1,684
Imbecile.....	6,817	4,881	4,687	4	8	182	3	4,062	389	2	425
Moron.....	13,242	11,215	9,490	140	38	1,547	3	8,207	1,919	4	1,082
Border-line condition.....	880	846	565	45	10	226		493	296	2	55
Degree not determined.....	919	861	677	5	10	169		470	269		122
Psychoneuroses.....	11,443	10,343	8,344	160	769	1,070	6	6,969	2,354	3	1,011
Anxiety neuroses.....	89	88	80		3	5		64	12		12
Angioneurodema.....	3	3	2	1				1	1		1
Compulsion neurosis.....	2	2			1	1					1
Enuresis.....	497	466	395	10	24	37		317	89		60
Hysteria.....	3,648	3,220	2,638	63	293	226	1	2,158	723	2	336
Migraine.....	181	178	150	4	10	14		120	36		22
Neurasthenia.....	3,982	3,800	2,984	56	313	447	4	2,544	898	1	353
Psychasthenia.....	1,118	1,079	911	7	51	110	1	736	226		106
Stammering.....	1,343	993	791	8	17	177		701	225		67
Traumatic neurosis.....	219	175	145	4	14	12		131	30		14
Undiagnosed.....	361	339	248	7	43	41		196	104		39
Psychoses.....	7,910	7,354	6,723	24	566	41	35	5,440	775	5	1,099
Traumatic.....	51	38	31		3	4		28	4		6
Senile.....	12	12	9		3			1	3		4
With cerebral arteriosclerosis.....	4	4			3		1	1			2
General paralysis.....	530	487	479		7			425	19		41
With cerebral syphilis.....	44	33	31		2			30	2		1
With Huntington's chorea.....	1	1	1					1			
With brain tumor.....	1	1	1						1		
With other brain or nervous diseases.....	2	2			2				1		1
Alcoholic.....	292	287	170	11	102	4	12	141	116	1	17
Drug and toxic.....	45	36	21	1	12	2		19	15		2
With pellagra.....	37	33	33					28	1		4
With other somatic diseases.....	109	92	40	3	44	5	2	32	47	2	9
Manic-depressive.....	1,385	1,304	1,194	5	96	9	10	960	139	2	193
Involution melancholia.....	3	3	3					2	1		
Dementia præcox.....	4,738	4,433	4,226	3	197	7	7	3,415	302		709
Paranoia and paranoid conditions.....	52	48	39	1	7	1		28	12		8
With mental deficiency.....	113	100	97		3			73	9		18
With constitutional psychopathic inferiority.....	66	64	60		3	1		46	4		14
Epileptic.....	131	112	109		3			75	8		29
Undiagnosed.....	294	264	178		79	7		132	91		41

TABLE 12.—Recommendations and final disposition of neuropsychiatric cases—Continued

Diagnoses	Total	White									
		Total	Recommendations				Disposition				
			Dis-charge	Duty	Treat-ment	Limited service	Died	Dis-charged	Re-tained	Absent without official leave	Unre-ported
Nervous diseases and injuries.....	6,916	6,116	5,292	29	441	354	28	4,530	1,058	4	496
Arteriosclerosis.....	41	41	37		1	3		31	5		5
Ataxia:											
(a) Friedrich's.....	4	4	3		1			3	1		
(b) Marie's.....	4	4	4					4			
Atrophy.....	55	52	43		3	6		34	12		6
Beriberi.....	1	1	1					1			
Brain:											
Abscess of.....	9	8	2		6		4	3	1		
Tumor of.....	27	27	24		3		2	22	2		1
Chorea.....	264	252	234	1	7	10		206	26		20
Combined sclerosis.....	3	3	2		1			2			1
Dercum's disease.....	1	1	1					1			
Ear disease.....	2	2	1		1			1	1		
Erythromelalgia.....	1	1				1					
Hemiplegia.....	258	210	192	1	7	10		165	24		21
Hematomyelia.....	3	3	1		2		1		2		
Hemorrhage, cerebral.....	17	16	13		3			13	2		1
Herpes zoster.....	2	2			2				1		1
Hydrocephalus.....	13	12	9			3		7	4		1
Injury:											
(a) Brain.....	337	245	188	1	22	34	2	165	60		18
(b) Spinal cord.....	39	33	24		7	2	1	21	8		3
(c) Peripheral nerve.....	178	159	99	1	26	24	1	74	57		18
Lateral sclerosis.....	24	21	19	1	1			15	2		4
Little's disease.....	2	2	2					2			
Ménière's disease.....	3	3	3					1	1		1
Meningitis.....	279	242	154	1	67	20	6	125	88		23
Multiple sclerosis.....	511	483	469	1	8	5		440	21	1	21
Myasthenia gravis.....	4	4	3		1			3	1		
Myelitis.....	32	27	20		7		3	18	3		3
Myotonia congenita.....	17	17	17					17			
Neuralgia.....	5	4			3	1			4		
Neuritis.....	222	213	100	4	100	9	3	88	109		13
Neurofibromatosis.....	3	3	2				1	2	1		
Paralysis agitans.....	18	16	15		1			16			
Paramyoclonus multiplex.....	3	3	3					1			2
Paralysis.....	340	282	243	3	1	35	3	150	114		15
Paraplegia.....	34	28	25		1	2		22	1		5
Pes planus.....	23	22	18			4		17	5		
Plumbism.....	13	12	1		8	3		7	4		1
Poliomyelitis.....	211	191	162		1	28		137	43		11
Progressive muscular atrophy.....	61	58	56			2		46	5		7
Progressive muscular dystrophy.....	15	14	13			1		12	1		1
Radiculitis.....	1	1	1					1			
Retinitis.....	1	1	1					1			
Raynaud's disease.....	8	8	6			2			7		1
Sciatica.....	137	127	82		35	10		74	43	1	9
Syphilis of central nervous system.....	2,462	2,161	2,055	9	49	48		1,789	199	2	171
Syringomyelia.....	17	16	16					13			3
Tabes dorsalis.....	333	294	288		3	3		249	15		30
Tetanus.....	2	2	1		1			1	1		
Tetany.....	1										
Thrombosis, cerebral.....	5	4	2		2			1	2		1
Tics.....	200	183	156		10	17		125	43		15
Torticollis.....	34	27	22		2	3		15	7		5
Tremor.....	243	212	167	3	2	40		148	50		14
Vagotonia.....	16	16	12		1	3		6	4		6
Undiagnosed.....	377	352	280	3	45	24	2	235	77		38
Epilepsy.....	6,388	5,273	5,100	15	69	89	4	4,402	338		529
Constitutional psychopathic states.....	6,196	5,941	5,178	96	123	544	6	4,308	920	4	703
Criminalism.....	323	306	273	18	11	4		220	35		51
Emotional instability.....	1,915	1,835	1,571	14	34	216	1	1,333	326	1	174
Inadequate personality.....	2,594	2,500	2,197	28	40	235	4	1,813	393	1	289
Nomadism.....	28	28	14	3	9	2		15	5		8
Paranoid personality.....	388	378	339	11	9	19		262	52		64
Pathological liar.....	28	27	24	1	1	1		16	3		8
Sexual psychopathy.....	190	171	160	7	1	3		130	11		30
Undiagnosed.....	730	696	600	14	18	64	1	519	95	2	79

TABLE 12.—*Recommendations and final disposition of neuropsychiatric cases—Continued*

Diagnoses	Total	White									
		Total	Recommendations				Disposition				
			Dis-charge	Duty	Treat-ment	Lim-ited serv-ice	Died	Dis-charged	Re-tained	Absent without official leave	Unre-ported
Endocrinopathies.....	4,805	4,506	3,927	6	32	541	2	3,545	718	-----	241
(a) Achondroplasia.....	2	2	1	-----	-----	1	-----	1	1	-----	-----
(b) Adrenal.....	6	6	3	1	2	-----	-----	3	2	-----	1
(c) Gonad.....	16	15	14	-----	-----	1	-----	12	2	-----	1
(d) Neurocirculatory asthenia.....	50	35	32	-----	1	2	-----	29	2	-----	4
(e) Pituitary.....	205	186	174	-----	1	11	1	162	13	-----	10
(f) Thyroid.....	4,501	4,239	3,682	5	27	525	1	3,321	695	-----	222
(g) Polyglandular.....	25	23	21	-----	1	1	-----	17	3	-----	3
Drug addiction.....	2,020	1,823	1,631	7	163	22	-----	1,439	249	-----	135
Alcoholism.....	1,858	1,834	1,650	21	111	52	-----	1,503	229	-----	102
Total.....	69,394	60,993	53,264	552	2,340	4,837	87	45,368	9,514	24	6,000

Diagnoses	Total	Colored									
		Total	Recommendations				Disposition				
			Dis-charge	Duty	Treat-ment	Lim-ited serv-ice	Died	Dis-charged	Re-tained	Absent without official leave	Unre-ported
Mental deficiency.....	4,055	3,366	12	10	667	1	3,043	816	2	193	
Imbecile.....	1,936	1,754	1	1	180	1	1,553	269	-----	113	
Moron.....	2,027	1,532	11	7	477	-----	1,446	506	1	74	
Border-line condition.....	34	27	-----	2	5	-----	-----	34	-----	-----	
Degree not determined.....	58	53	-----	-----	5	-----	44	7	1	6	
Psychoneuroses.....	1,100	853	5	62	180	-----	740	276	1	83	
Anxiety neuroses.....	1	1	-----	-----	-----	-----	1	-----	-----	-----	
Enuresis.....	31	22	-----	9	-----	-----	22	4	-----	5	
Hysteria.....	428	358	5	41	24	-----	299	84	1	44	
Migraine.....	3	3	-----	-----	-----	-----	3	-----	-----	-----	
Neurasthenia.....	182	150	-----	5	27	-----	126	41	-----	15	
Psychasthenia.....	39	35	-----	-----	4	-----	29	7	-----	3	
Stammering.....	350	230	-----	2	118	-----	217	123	-----	10	
Traumatic neurosis.....	44	39	-----	3	2	-----	34	8	-----	2	
Undiagnosed.....	22	15	-----	2	5	-----	9	9	-----	4	
Psychoses.....	556	510	4	36	6	4	425	63	-----	64	
Traumatic.....	13	12	-----	-----	1	-----	13	-----	-----	-----	
General paralysis.....	43	43	-----	-----	-----	-----	36	2	-----	5	
With cerebral syphilis.....	11	10	-----	1	-----	-----	10	1	-----	-----	
Alcoholic.....	5	1	-----	2	2	-----	1	4	-----	-----	
Drug and toxic.....	9	3	2	4	-----	-----	1	6	-----	2	
With pellagra.....	4	4	-----	-----	-----	-----	4	-----	-----	-----	
With other somatic diseases.....	17	6	2	8	1	1	5	10	-----	1	
Manic-depressive.....	81	76	-----	4	1	2	67	6	-----	6	
Dementia præcox.....	305	298	-----	7	-----	1	245	22	-----	37	
Paranoia and paranoid conditions.....	4	3	-----	1	-----	-----	2	2	-----	-----	
With mental deficiency.....	13	13	-----	-----	-----	-----	10	1	-----	2	
With constitutional psychopathic inferiority.....	2	2	-----	-----	-----	-----	-----	-----	-----	-----	
Epileptic.....	19	19	-----	-----	-----	-----	19	-----	-----	2	
Undiagnosed.....	30	20	-----	9	1	-----	12	9	-----	9	

TABLE 12.—*Recommendations and final disposition of neuropsychiatric cases—Continued*

Diagnoses	Colored									
	Total	Recommendations				Disposition				
		Dis-charge	Duty	Treat-ment	Lim-ited serv-ice	Died	Dis-charged	Re-tained	Absent without official leave	Unre-ported
Nervous diseases and injuries.....	800	731	9	37	23	5	665	88		42
Atrophy.....	3	3					3			
Brain: Abscess of.....	1			1				1		
Chorea.....	12	11			1		11	1		
Hemiplegia.....	48	45			3		43	4		1
Hemorrhage, cerebral.....	1	1					1			
Hydrocephalus.....	1	1					1			
Injury.....										
(a) Brain.....	92	83	2		7		77	12		3
(b) Spinal cord.....	6	5		1		1	4	1		
(c) Peripheral nerve.....	28	25		3			25	3		
Lateral sclerosis.....	3	3					3			
Meningitis.....	37	32	1	4		1	28	8		
Multiple sclerosis.....	28	28					23	2		3
Myelitis.....	5			5			1	4		
Neuralgia.....	1	1					1			
Neuritis.....	9	6		3			4	4		1
Paralysis agitans.....	2	1		1				2		
Paralysis.....	58	47	3	5	3		47	9		2
Paraplegia.....	6	5		1			5			1
Pes planus.....	1	1					1			
Plumbism.....	1	1					1			
Polomyelitis.....	20	19		1			19	1		
Progressive muscular atrophy.....	3	3					3			
Progressive muscular dystrophy.....	1	1					1			
Sciatica.....	10	10					9			1
Syphilis of central nervous system.....	301	283	3	10	5	3	247	27		24
Syringomyelia.....	1	1					1			
Tabes dorsalis.....	39	39					36	1		2
Tetany.....	1	1								1
Thrombosis, cerebral.....	1	1								1
Tics.....	17	14		1	2		14	3		
Torticollis.....	7	7					6			1
Tremor.....	31	30			1		29	2		
Undiagnosed.....	25	23		1	1		21	3		1
Epilepsy.....	1, 115	1, 079	1	17	18	1	983	72		59
Constitutional psychopathic states.....	255	234	2	3	16		207	26		22
Criminalism.....	17	16		1			15	1		1
Emotional instability.....	80	73		2	5		61	7		12
Inadequate personality.....	94	86	1		7		76	12		6
Paranoid personality.....	10	10					9			1
Pathological liar.....	1	1					1			
Sexual psychopathy.....	19	18	1				17			2
Undiagnosed.....	34	30			4		28	6		
Endocrinopathies.....	299	266		1	32		250	28		21
Gonad.....	1	1					1			
Neurocirculatory asthenia.....	15	14			1		11	4		
Pituitary.....	19	16		1	2		15	3		1
Thyroid.....	262	233			29		221	21		20
Polyglandular.....	2	2					2			
Drug addiction.....	197	191		3	3	1	175	9		12
Alcoholism.....	24	23			1		21	1		2
Total.....	8, 401	7, 253	33	169	946	12	6, 509	1, 379	3	498

FAMILY HISTORY

Tables 13 to 17 gave details concerning the members of families having a history of nervous or mental disease, inebriety, and mental deficiency.

Tables 18 and 19 summarize information as to family history in the different clinical groups. Table 19 indicates the distribution throughout the nine

clinical groups of family history of nervous disease, mental disease, inebriety and mental deficiency in the 39,484 cases classified under these headings. Later in the chapter, for each clinical group an additional summary is made in accordance with disorder and relatives. The number of the classified cases which serves as a basis of this summary is small. The information is interesting but too much weight should not be given to it.

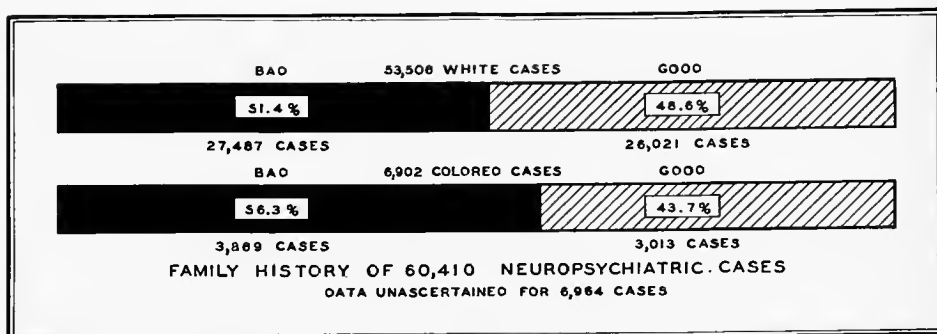


CHART VIII

TABLE 13.—*Neuropsychiatric cases giving a family history of nervous disease, mental disease, inebriety, or mental deficiency*

Diagnoses	Total	White cases				Colored cases			
		Total	Family history of neuropathic taint			Total	Family history of neuropathic taint		
			Posi- tive	Nega- tive	Unas- cer- tained		Posi- tive	Nega- tive	Unas- cer- tained
Mental deficiency.....	21,858	17,803	6,624	8,103	3,076	4,055	1,598	1,430	1,027
Psychoneuroses.....	11,443	10,343	5,486	4,187	670	1,100	577	445	78
Psychoses.....	7,910	7,354	3,441	2,850	1,063	556	232	187	137
General paralysis.....	530	487	137	263	87	43	10	20	13
Alcoholic.....	292	287	116	122	49	5	2	3	---
Manic-depressive.....	1,355	1,304	652	484	168	81	31	33	17
Dementia præcox.....	4,738	4,433	2,143	1,675	615	305	137	93	75
Epileptic.....	131	112	52	33	27	19	12	5	2
Other forms.....	834	731	341	273	117	103	40	33	30
Nervous diseases and injuries.....	6,916	6,116	2,164	3,215	737	800	360	336	104
Chorea.....	264	252	162	78	12	12	7	5	---
Hemiplegia.....	258	210	72	116	22	48	17	27	4
Injury to nervous system.....	554	428	140	241	47	126	52	49	25
Meningitis.....	279	242	76	145	21	37	19	14	4
Multiple sclerosis.....	511	483	226	193	64	28	18	7	3
Neuritis.....	222	213	56	141	16	9	3	5	1
Paralysis.....	340	282	85	173	24	58	24	28	6
Poliomyelitis.....	211	191	55	120	16	20	14	5	1
Sciatica.....	137	127	36	77	14	10	4	6	---
Syphilis C. N. S.....	2,462	2,161	692	1,188	281	301	135	124	42
Tabes dorsalis.....	333	294	75	149	70	39	17	15	7
Tic.....	200	183	89	72	22	17	11	6	---
Tremor.....	243	212	122	79	11	31	20	11	---
Other forms.....	902	838	278	443	117	64	19	34	11
Epilepsy.....	6,388	5,273	2,859	1,867	547	1,115	714	333	68
Constitutional psychopathic states.....	6,196	5,941	3,108	2,188	645	255	144	70	41
Endocrinopathies.....	4,805	4,506	2,549	1,645	312	299	180	100	19
Drug addiction.....	2,020	1,823	648	967	208	197	66	107	24
Alcoholism.....	1,858	1,834	608	999	227	24	18	5	1
Total.....	69,394	60,993	27,487	26,021	7,485	8,401	3,889	3,013	1,499

TABLE 14.—*Neuropsychiatric cases giving a family history of nervous disease*

Diagnoses	Total	White							
		Number of cases	Number of relatives with nervous disease						
			Fa-thers	Mo-th-ers	Grand-parents	Sib-lings	Collat-erals	De-nied	Unas-cer-tained
Mental deficiency.....	3, 456	2, 967	686	1, 542	79	1, 419	376	11, 427	3, 409
Psychoneuroses.....	4, 009	3, 587	1, 025	2, 301	128	2, 110	402	6, 015	759
Psychoses.....	1, 534	1, 438	360	768	52	735	210	4, 646	1, 270
General paralysis.....	74	64	15	37	1	27	1	337	86
Alcoholic.....	38	36	6	11	1	19	4	198	53
Manic-depressive.....	294	282	77	140	7	170	53	815	207
Dementia præcox.....	927	873	211	485	38	420	127	2, 804	756
Epileptic.....	32	27	10	12	2	21	7	50	35
Other forms.....	169	156	41	83	3	78	18	442	133
Nervous diseases and injuries.....	1, 572	1, 389	354	690	59	643	196	3, 870	857
Chorea.....	129	124	32	69	5	81	27	113	15
Hemiplegia.....	48	44	8	21	2	18	8	145	21
Injuries to nervous system.....	94	71	24	39	3	29	3	309	48
Meningitis.....	62	56	7	33	3	25	8	160	26
Multiple sclerosis.....	176	169	41	83	7	85	23	234	80
Neuritis.....	34	33	4	12	1	23	10	160	20
Paralysis.....	71	56	12	25	2	19	12	202	24
Poliomyelitis.....	45	37	14	18	4	10	7	138	16
Sciatica.....	27	25	10	13		13	1	87	15
Syphilis C. N. S.....	458	379	81	205	11	153	45	1, 431	351
Tabes dorsalis.....	37	32	10	18	1	15	1	187	75
Tic.....	74	68	18	31	3	34	20	95	20
Tremor.....	110	93	39	41	7	44	7	107	12
Other forms.....	207	202	54	82	10	94	24	502	134
Epilepsy.....	2, 036	1, 525	432	875	111	1, 251	395	3, 083	665
Constitutional psychopathic states.....	1, 616	1, 535	394	947	59	839	192	3, 611	795
Endocrinopathies.....	1, 180	1, 045	417	1, 024	85	988	250	1, 111	350
Drug addiction.....	266	239	53	106	7	99	25	1, 321	263
Alcoholism.....	224	221	43	102	3	78	23	1, 343	270
Total.....	15, 893	13, 946	3, 764	8, 355	583	8, 162	2, 069	35, 409	8, 638

Diagnoses	Number of cases	Colored							
		Number of relatives with nervous disease							
		Fa-thers	Mo-th-ers	Grand-parents	Sib-lings	Collat-erals	De-nied	Unas-cer-tained	
Mental deficiency.....	489	110	196	32	399	139	2, 383	1, 183	
Psychoneuroses.....	422	104	138	11	343	62	596	82	
Psychoses.....	96	21	26	3	50	18	314	146	
General paralysis.....	10								
Alcoholic.....	2	6	2		1	5	19	14	
Manic-depressive.....	12				2		3		
Dementia præcox.....	54	10	14	3	23	8	49	20	
Epileptic.....	5	2	2		4	2	175	76	
Other forms.....	13	3	4		11	3	9	5	
Nervous diseases and injuries.....	183	42	73	11	102	25	491	126	
Chorea.....	5		3	1	2		7		
Hemiplegia.....	4	1	2	1	3	1	40	4	
Injuries to nervous system.....	23	5	8	1	10	2	70	33	
Meningitis.....	6	1	3		3		27	4	
Multiple sclerosis.....	7	2	3	1	2	1	17	4	
Neuritis.....	1						7	1	
Paralysis.....	15	5	6	3	4	5	40	3	
Poliomyelitis.....	8	2	3		11		11	1	
Sciatica.....	2		1			3		8	
Syphilis C. N. S.....	79	14	31	2	40	9	175	47	
Tabes dorsalis.....	5	3	1			2	24	10	
Tic.....	6	3	3	1	6		11		
Tremor.....	17	5	8	1	14		14		
Other forms.....	5	1	1		6	2	48	11	
Epilepsy.....	511	82	166	30	362	94	525	79	
Constitutional psychopathic states.....	81	17	39	6	41	16	120	54	
Endocrinopathies.....	135	35	58	15	65	15	145	19	
Drug addiction.....	27	2	16	1	7	2	40	30	
Alcoholism.....	3	2	1		1	6	20	1	
Total.....	1, 947	415	713	109	1, 370	377	4, 634	1, 720	

TABLE 15.—*Neuropsychiatric cases giving a family history of mental disease*

Diagnoses	Total	White							
		Number of cases	Number of relatives with mental disease						Unas- cer- tained
			Fa- thers	Moth- ers	Grand- parents	Sib- lings	Colla- terals	Denied	
Mental deficiency.....	2,855	2,146	353	403	194	650	972	12,252	3,405
Psychoneuroses.....	1,744	1,551	255	292	159	399	781	7,890	902
Psychoses.....	1,855	1,729	357	384	208	561	940	4,427	1,198
General paralysis.....	42	41	11	10	2	9	21	366	80
Alcoholic.....	40	40	8	10	3	14	24	195	52
Manic-depressive.....	390	373	86	102	41	119	176	736	195
Dementia præcox.....	1,182	1,101	222	221	128	371	612	2,625	707
Epileptic.....	27	23	7	3	5	5	17	57	32
Other forms.....	174	151	23	38	29	43	90	448	132
Nervous diseases and injuries.....	653	515	97	102	67	113	309	4,782	819
Chorea.....	34	33	9	6	6	7	46	200	19
Hemiplegia.....	26	24	2	3	3	4	11	157	29
Injuries to nervous system.....	53	34	6	4	3	6	16	345	49
Meningitis.....	34	24	2	4	2	6	16	196	22
Multiple sclerosis.....	61	50	10	12	4	9	24	353	80
Neuritis.....	19	17	4	1	1	6	7	178	18
Paralysis.....	26	20	3	6	3	1	12	237	25
Poliomyelitis.....	17	16	3	1	2	3	7	158	17
Sciatica.....	11	10	1	2	1	4	7	101	16
Syphilis C. N. S.....	210	149	34	34	23	42	87	1,710	302
Tabes dorsalis.....	33	26	7	3	5	6	5	192	76
Tic.....	22	17	4	6	3	4	12	143	23
Tremor.....	37	30	3	9	4	6	20	165	17
Other forms.....	70	65	9	11	11	13	39	647	126
Epilepsy.....	1,035	747	110	181	114	198	357	3,745	781
Constitutional psychopathic states.....	1,061	999	206	248	123	268	586	4,111	831
Endocrinopathies.....	543	496	75	102	52	116	238	3,612	398
Drug addiction.....	177	149	26	29	15	45	87	1,417	257
Alcoholism.....	115	113	18	9	8	27	52	1,460	261
Total.....	10,038	8,445	1,497	1,750	940	2,377	4,322	43,696	8,852

Diagnoses	Number of cases	Colored							
		Fa- thers	Moth- ers	Grand- parents	Sib- lings	Colla- terals	Denied	Unas- cer- tained	
Mental deficiency.....	709	83	113	52	264	432	2,239	1,107	
Psychoneuroses.....	193	18	22	23	62	121	826	81	
Psychoses.....	126	28	23	10	45	64	292	13	
General paralysis.....	1	—	1	—	—	—	29	138	
Alcoholic.....	17	2	6	1	7	12	5	19	
Manic-depressive.....	81	19	12	6	24	40	150	74	
Dementia præcox.....	4	1	1	—	3	3	13	2	
Epileptic.....	23	6	3	3	11	9	50	30	
Other forms.....	—	—	—	—	—	—	—	—	
Nervous diseases and injuries.....	138	23	11	19	50	73	529	133	
Chorea.....	1	—	—	—	1	—	9	2	
Hemiplegia.....	2	2	—	1	2	4	43	3	
Injuries to nervous system.....	19	4	3	1	3	9	73	34	
Meningitis.....	10	1	1	—	8	4	23	4	
Multiple sclerosis.....	11	4	—	2	5	4	15	2	
Neuritis.....	2	—	—	—	2	4	6	1	
Paralysis.....	6	2	—	2	2	1	48	4	
Poliomyelitis.....	1	—	1	—	—	—	18	1	
Sciatica.....	1	—	—	—	—	1	9	—	
Syphilis C. N. S.....	61	6	6	10	14	33	184	56	
Tabes dorsalis.....	7	2	—	1	5	6	22	10	
Tic.....	5	—	—	—	5	1	12	—	
Tremor.....	7	1	—	1	—	4	21	3	
Other forms.....	5	—	—	1	3	2	46	13	
Epilepsy.....	288	39	49	30	109	139	729	98	
Constitutional psychopathic states.....	62	13	12	8	21	29	136	57	
Endocrinopathies.....	47	2	6	9	17	27	233	19	
Drug addiction.....	28	4	4	4	3	13	144	25	
Alcoholism.....	2	—	—	—	1	1	21	1	
Total.....	1,593	210	240	155	572	899	5,149	1,659	

TABLE 16.—*Neuropsychiatric cases giving a family history of inebriety*

Diagnoses	Total	White						
		Number of cases	Number of relatives with inebriety					
			Fathers	Mothers	Grand-parents	Sib-lings	Collat-erals	Denied
Mental deficiency.....	3,028	2,630	1,963	55	55	781	446	11,810
Psychoneuroses.....	1,566	1,434	926	18	68	337	334	7,917
Psychoses.....	1,403	1,326	988	27	45	358	240	4,745
General paralysis.....	63	61	49	-----	7	21	17	340
Alcoholic.....	112	110	57	1	3	47	22	119
Manic-depressive.....	215	206	153	3	8	38	36	884
Dementia præcox.....	834	789	620	19	21	172	135	2,897
Epileptic.....	13	12	10	-----	5	5	1	61
Other forms.....	166	148	99	4	6	75	29	444
Nervous diseases and injuries.....	970	822	559	15	25	254	153	4,454
Chorea.....	43	42	30	-----	2	5	8	187
Hemiplegia.....	32	26	19	1	-----	6	7	157
Injuries to nervous system.....	82	48	30	-----	1	17	12	332
Meningitis.....	23	21	10	4	2	2	9	198
Multiple sclerosis.....	110	103	63	-----	5	16	22	301
Neuritis.....	21	20	18	-----	1	3	3	174
Paralysis.....	40	27	17	-----	1	13	4	228
Poliomyelitis.....	21	14	9	-----	-----	10	4	159
Sciatica.....	16	13	9	-----	-----	7	10	97
Syphilis C. N. S.....	402	349	240	5	5	121	42	1,496
Tabes dorsalis.....	33	30	26	3	1	11	10	187
Tic.....	19	17	16	1	-----	5	2	140
Tremor.....	29	22	17	-----	1	3	3	172
Other forms.....	99	90	55	1	6	35	17	626
Epilepsy.....	894	681	599	20	27	210	195	3,841
Constitutional psychopathic states.....	1,167	1,119	861	32	44	254	219	4,037
Endocrinopathies.....	1,737	675	462	12	23	129	152	3,451
Drug addiction.....	429	382	247	22	13	134	96	1,191
Alcoholism.....	542	531	355	18	17	183	116	1,077
Total.....	10,736	9,600	6,960	219	317	2,640	1,951	42,523

Diagnoses	Total	Colored						
		Number of cases	Number of relatives with inebriety					
			Fathers	Mothers	Grand-parents	Sib-lings	Collat-erals	Denied
Mental deficiency.....	398	248	18	8	196	87	2,463	1,195
Psychoneuroses.....	132	96	5	4	45	28	879	89
Psychoses.....	77	52	6	-----	41	16	340	139
General paralysis.....	2	2	1	-----	-----	2	-----	14
Alcoholic.....	2	1	1	-----	-----	-----	3	-----
Manic-depressive.....	9	3	-----	-----	3	4	53	19
Dementia præcox.....	45	32	3	-----	29	9	186	74
Epileptic.....	1	1	-----	-----	-----	-----	15	3
Other forms.....	18	13	1	-----	9	1	56	29
Nervous diseases and injuries.....	148	69	2	1	43	39	541	111
Chorea.....	1	1	1	-----	-----	-----	9	2
Hemiplegia.....	6	5	-----	-----	2	-----	38	4
Injuries to nervous system.....	34	5	-----	-----	5	6	77	15
Meningitis.....	2	1	-----	-----	1	-----	30	5
Multiple sclerosis.....	7	2	-----	-----	1	8	20	1
Neuritis.....	1	-----	-----	-----	-----	-----	7	1
Paralysis.....	13	4	-----	-----	7	2	42	3
Poliomyelitis.....	3	4	-----	-----	4	-----	12	1
Sciatica.....	7	2	-----	-----	-----	1	6	1
Syphilis C. N. S.....	53	32	1	1	10	20	197	51
Tabes dorsalis.....	3	3	-----	-----	1	-----	24	12
Tic.....	2	1	-----	-----	-----	-----	14	1
Tremor.....	7	4	-----	-----	7	-----	24	-----
Other forms.....	9	5	-----	-----	3	2	41	14
Epilepsy.....	213	116	-----	-----	104	35	806	96
Constitutional psychopathic states.....	48	29	4	-----	17	35	153	54
Endocrinopathies.....	62	36	5	4	40	13	212	25
Drug addiction.....	47	24	3	1	20	11	125	25
Alcoholism.....	11	9	1	-----	6	5	7	6
Total.....	1,136	679	43	18	512	269	5,625	1,740

TABLE 17.—*Neuropsychiatric cases giving family history of mental deficiency*

Diagnoses	Total	White						
		Number of cases	Number of relatives with mental deficiency					
			Fathers	Mothers	Grand-parents	Siblings	Collaterals	Denied
Mental deficiency	1,752	1,478	244	243	9	1,339	151	12,376
Psychoneuroses	84	34	21	23	8	190	91	9,406
Psychoses	307	280	42	53	3	232	89	5,644
General paralysis	7	5		1		3	2	390
Alcoholic	1	1				2		231
Manic-depressive	48	47	8	7		49	13	1,038
Dementia præcox	207	194	25	35	2	134	57	3,369
Epileptic	12	10	1	1		8	3	58
Other forms	32	23	8	9	1	36	14	558
Nervous diseases and injuries	125	89	5	5	4	69	35	5,248
Chorea	6	5				4		222
Hemiplegia	6	5				3	2	172
Injuries to nervous system	10	3				2	1	368
Meningitis	2	1				1	1	198
Multiple sclerosis	19	14	1	1	1	8	6	388
Neuritis	3	2				1	3	188
Paralysis	4	2				3		254
Poliomyelitis	4	4		1		3		170
Sciatica	6	5	1	1		4	4	104
Syphilis C. N. S.	31	19			2	17	9	1,809
Tabes dorsalis	3	1		1		3		212
Tic	3	3				6		155
Tremor	10	7				5	2	186
Other forms	18	18	2		1	9	7	695
Epilepsy	288	208	19	19	7	165	69	4,194
Constitutional psychopathic states	53	35	81	31	7	167	90	5,003
Endocrinopathies	165	152	7	8	3	93	21	3,907
Drug addiction	35	33	7	8		24	9	1,504
Alcoholism	8	8	1			4	3	1,512
Total	2,817	2,317	427	390	41	2,282	557	48,596

Diagnoses	Number of cases	Colored						
		Number of relatives with mental deficiency						Unas- cer- tained
		Fathers	Mothers	Grand-parents	Siblings	Collaterals	Denied	
Mental deficiency	274	32	36	3	292	52	2,535	1,246
Psychoneuroses	50	9	8	1	52	21	958	126
Psychoses	27	7	5		18	5	382	147
General paralysis	2				2		27	14
Alcoholic							4	1
Manic-depressive	1				1	3	58	22
Dementia præcox	13	5	3		7		213	79
Epileptic	2				2		14	3
Other forms	9	2	2		6	2	66	28
Nervous diseases and injuries	36	4	4	2	24	7	606	160
Chorea	1				2		9	2
Hemiplegia	1				1	1	47	
Injuries to nervous system	7	1	2	1	1	2	81	38
Meningitis	1				3		30	6
Multiple sclerosis	5	1			3	1	19	4
Neuritis	1				1		7	1
Paralysis	2				2		42	14
Poliomyelitis							20	
Sciatica	1					1	9	
Syphilis C. N. S.	12	1	2		7	2	226	63
Tabes dorsalis	2	1			1		24	13
Tic							16	1
Tremor	3				3		24	4
Other forms				1			52	14
Epilepsy	80	8	11	2	79	15	909	126
Constitutional psychopathic states	18	2	4		1	11	165	72
Endocrinopathies	13	1		1	5	8	247	39
Drug addiction	2				2		175	20
Alcoholism							23	1
Total	500	63	68	9	470	119	5,970	1,931

TABLE 18.—*Neuropsychiatric cases giving family history of neuropathic taint. Percentage distribution ^a*

Family history of neuropathic taint	Total cases		Per cent of cases ascertained as to family history in each clinical group								
	Number	Per cent	Mental deficiency	Psychoneuroses	Psychoses	Neurological	Epilepsy	Constitutional psychopathic states	Endocrinopathies	Drug addiction	Alcoholism
Positive.....	31,376	51.9	46.3	56.7	54.7	41.5	61.9	59.0	61.0	39.9	38.4
Negative.....	29,034	48.1	53.7	43.3	45.3	58.5	38.1	41.0	39.0	60.1	61.6
Total ascertained.....	60,410	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^a There were 8,984 cases of which the family history of neuropathic taint was unascertained.

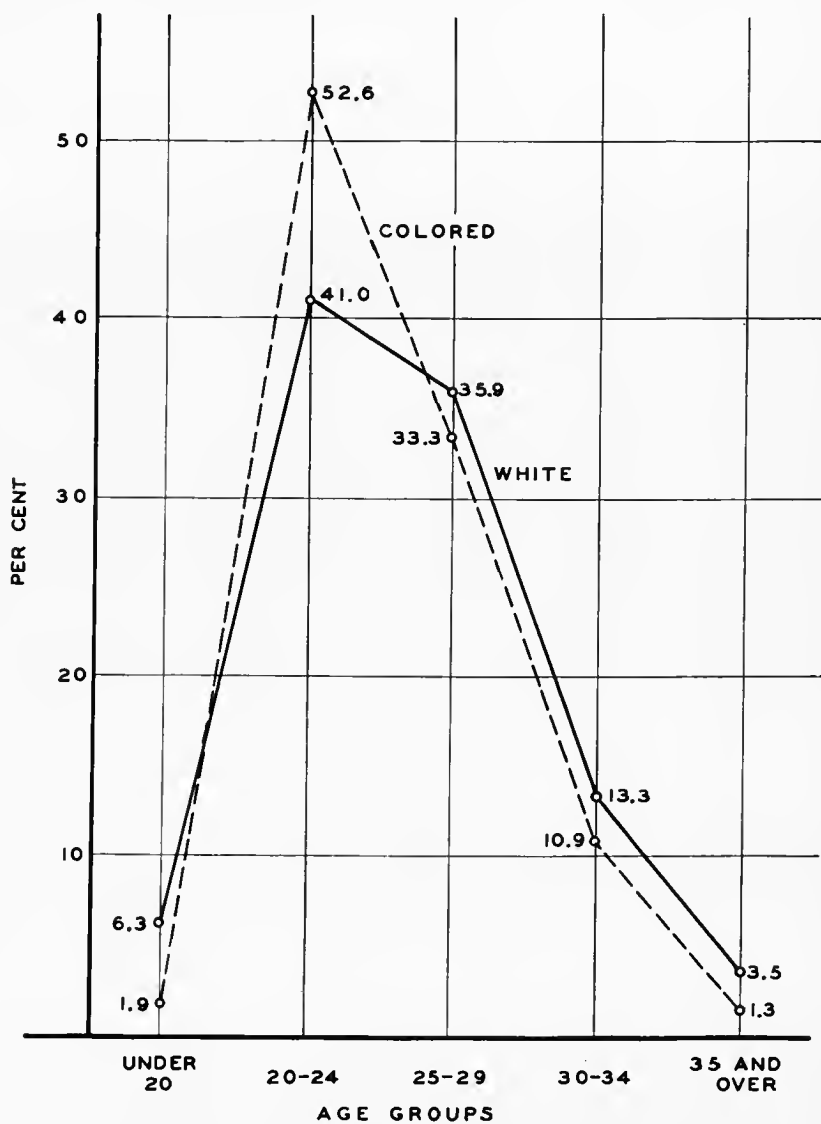
TABLE 19.—*Family history of principal neuropathic taints among neuropsychiatric cases*

Specified neuropathic taint in family	Cases with each taint		Per cent of cases with each specified taint among the total cases with ascertained family history in each clinical group								
	Number	Per cent	Mental deficiency	Psychoneuroses	Psychoses	Neurological	Epilepsy	Constitutional psychopathic states	Endocrinopathies	Drug addiction	Alcoholism
Nervous diseases.....	15,893	26.3	19.5	37.5	22.9	25.9	35.3	29.3	26.4	14.9	13.7
Mental diseases.....	10,038	16.6	16.1	16.3	27.6	10.7	17.9	19.3	12.1	10.0	7.1
Inebriety.....	10,736	17.8	17.1	14.6	20.9	16.0	15.5	21.2	16.5	24.0	33.3
Mental deficiency.....	2,817	4.7	9.9	.8	4.6	2.1	5.0	1.0	3.7	2.0	.5
Total neuropathic taints..	39,484	65.4	62.5	69.2	76.0	54.7	73.7	70.7	58.7	50.7	54.5

AGE

In Table 20 it is possible to compare the ages of the white with the colored neuropsychiatric cases. This table shows the predominance of neuropsychiatric disorders among colored between the ages 20 and 24 years. There is little difference in the percentages for the other groups, except the colored naturally fall below the whites on account of the increase in the percentage for the colored in the age group from 20 to 24 years.

Table 21 summarizes information as to age in the different clinical groups.



AGE GROUPS OF 67,569 NEUROPSYCHIATRIC CASES
DATA UNASCERTAINED FOR 1,625 CASES

TABLE 20.—*Ages of neuropsychiatric cases*

Diagnoses	Total	White						
		Total	Under 20 years	20 to 24 years	25 to 29 years	30 to 34 years	35 years and over	Unas- cer- tained
Mental deficiency.....	21, 858	17, 803	1, 685	7, 878	5, 782	1, 692	143	623
Psychoneuroses.....	11, 443	10, 343	445	4, 200	3, 962	1, 331	242	163
Psychoses.....	7, 910	7, 354	334	2, 551	2, 694	1, 158	382	235
General paralysis.....	530	487	4	37	158	165	110	13
Alcoholic.....	292	287	2	33	107	95	36	14
Manic-depressive.....	1, 385	1, 304	31	427	500	220	84	42
Dementia præcox.....	4, 738	4, 433	254	1, 781	1, 634	549	85	130
Epileptic.....	131	112	10	44	42	119	4	2
Other forms.....	834	731	33	229	253	119	63	34
Nervous diseases and injuries.....	6, 916	6, 116	184	1, 831	2, 264	1, 171	480	186
Chorea.....	264	252	19	136	75	20	-----	2
Hemiplegia.....	258	210	1	71	98	29	7	4
Injuries to nervous system.....	554	428	11	165	172	55	9	16
Meningitis.....	279	242	10	125	83	19	2	3
Multiple sclerosis.....	511	483	29	168	183	71	16	16
Neuritis.....	222	213	7	78	76	33	13	6
Paralysis.....	340	282	12	111	109	37	6	7
Poliomyelitis.....	211	191	7	107	50	19	2	6
Sciatica.....	137	127	-----	40	55	21	8	3
Syphilis C. N. S.....	2, 462	2, 161	45	382	820	589	266	59
Tabes dorsalis.....	333	294	3	29	87	93	60	22
Tic.....	200	183	7	74	74	22	3	3
Tremor.....	243	212	1	67	88	48	3	5
Other forms.....	902	838	32	278	294	115	85	34
Epilepsy.....	6, 388	5, 273	358	2, 383	1, 790	497	57	188
Constitutional psychopathic states.....	6, 196	5, 941	537	2, 438	1, 960	745	174	87
Endocrinopathies.....	4, 805	4, 506	161	2, 293	1, 545	410	28	69
Drug addiction.....	2, 020	1, 823	12	665	845	238	28	35
Alcoholism.....	1, 858	1, 834	13	131	489	652	513	36
Total.....	69, 394	60, 993	3, 729	24, 370	21, 331	7, 894	2, 047	1, 622

Diagnoses	Total	Colored						
		Under 20 years	20 to 24 years	25 to 29 years	30 to 34 years	35 years and over	Unascer- tained	
Mental deficiency.....	4, 055	78	2, 273	1, 168	353	42	141	
Psychoneuroses.....	1, 100	34	569	365	110	8	14	
Psychoses.....	556	9	227	216	70	15	19	
General paralysis.....	43	-----	8	19	9	5	2	
Alcoholic.....	5	-----	-----	3	2	-----	-----	
Manic-depressive.....	81	1	35	33	7	1	4	
Dementia præcox.....	305	8	138	111	35	4	9	
Epileptic.....	19	-----	6	10	1	1	1	
Other forms.....	103	-----	40	40	16	4	3	
Nervous diseases and injuries.....	800	7	310	315	138	17	13	
Chorea.....	12	-----	6	5	1	-----	-----	
Hemiplegia.....	48	-----	26	13	6	2	1	
Injuries to nervous system.....	126	-----	58	46	17	2	3	
Meningitis.....	37	-----	19	11	6	1	-----	
Multiple sclerosis.....	28	1	13	11	3	-----	-----	
Neuritis.....	9	-----	5	4	-----	-----	-----	
Paralysis.....	58	-----	26	18	11	1	2	
Poliomyelitis.....	20	-----	8	11	-----	-----	1	
Sciatica.....	10	-----	5	4	1	-----	-----	
Syphilis C. N. S.....	301	1	91	133	63	9	4	
Tabes dorsalis.....	39	-----	11	14	13	1	-----	
Tic.....	17	1	9	6	1	-----	-----	
Tremor.....	31	-----	9	15	5	1	1	
Other forms.....	64	4	24	24	11	-----	1	
Epilepsy.....	1, 115	19	598	388	87	11	12	
Constitutional psychopathic states.....	255	5	118	90	35	5	2	
Endocrinopathies.....	299	6	163	90	36	2	2	
Drug addiction.....	197	2	54	88	50	3	-----	
Alcoholism.....	24	-----	3	12	7	2	-----	
Total.....	8, 401	160	4, 315	2, 732	886	105	203	

TABLE 21.—*Ages of neuropsychiatric cases. Percentage distribution*

Age on enlistment	Total with ascertained ages		Per cent distribution of ascertained ages in each clinical group								
	Number	Per cent	Mental deficiency	Psychoneuroses	Psychoses	Neurological	Epilepsy	Constitutional psychopathic states	Endocrinopathies	Drug addiction	Alcoholism
Under 20 years.....	3,889	5.8	8.4	4.3	4.5	2.8	6.1	8.9	3.5	0.7	0.7
20 to 24 years.....	28,685	42.5	48.1	42.3	36.3	31.9	48.2	41.8	51.9	36.2	7.4
25 to 29 years.....	24,063	35.6	32.9	38.4	38.0	38.4	35.2	33.6	34.5	47.0	27.5
30 to 34 years.....	8,780	13.0	9.7	12.8	16.0	19.5	9.4	12.8	9.4	14.5	36.2
35 years and over.....	2,152	3.2	.9	2.2	5.2	7.4	1.1	2.9	.7	1.6	28.2
Total cases with ascertained ages.....	67,569	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Ages unascertained of 1,825 cases.

SCHOOLING

From the data which were compiled by the division of psychology of the Surgeon General's Office, reasonably accurate information was obtained as to the literacy of the men who made up the Army.³ The statements as to schooling, which were given by the men subjected to the psychological examinations, were not verified, and if there is any error it is probable that the facts were overstated by the men, as it is believed there was a general tendency for them to exaggerate their previous training.

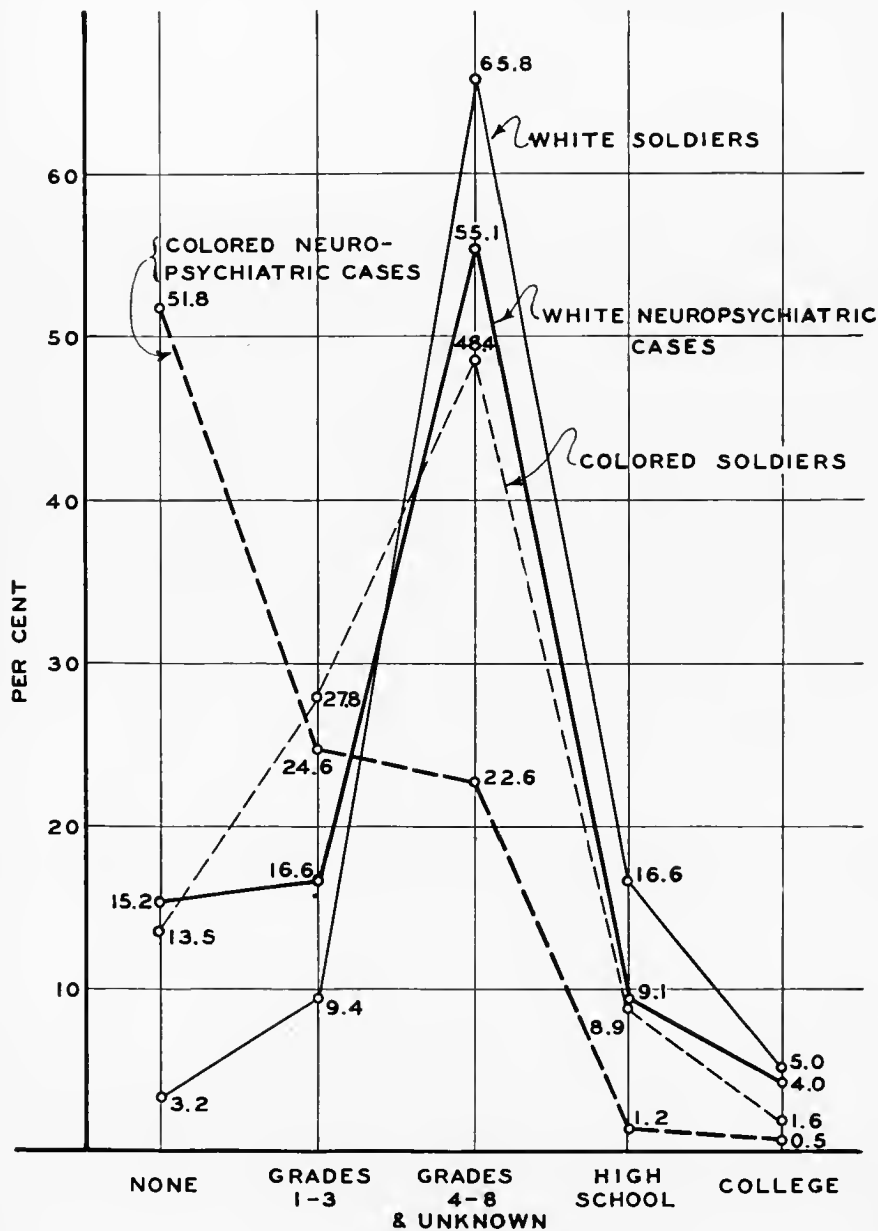
From the entire group of men tested by the psychologists, about 80,000 records were carefully selected as a fair sample of the men in the Army. (Table 22.) The tabulation upon which the report of the division of psychology is based, is used herein for purposes of comparison.

The neuropsychiatric records are perhaps somewhat more accurate in reference to education than the psychological records, because of the opportunities for verification. Each case was personally interviewed by the neuropsychiatrist, and the records corrected if misstatements were found.

TABLE 22.—*Schooling of 80,000 soldiers as determined by psychological examinations*

Schooling	White (per cent)	Colored (per cent)
None.....	3.2	13.5
Grades.....	75.2	76.0
High school.....	16.6	8.9
College.....	5.0	1.6
Total.....	100.0	100.0

Source of information: Report of division of psychology of the Surgeon General's Office.



SCHOOLING OF NEUROPSYCHIATRIC CASES
COMPARED WITH THAT OF OTHER SOLDIERS

TABLE 23.—*Schooling of neuropsychiatric cases*

Diagnoses	Total	Total	None	White									Foreign-tongued	Education unascertained
				1 to 3	4 to 8	Unascertained	High school			College				
							1 to 2 years	3 to 4 years	Unascertained	1 to 2 years	3 to 4 years	Unascertained		
Mental deficiency	21, 858	17, 803	5, 729	4, 974	5, 376	455	67	16	10	8	2	15	52	1, 099
Psychoneuroses	11, 443	10, 343	759	1, 112	5, 716	321	771	525	106	275	254	106	53	345
Psychoses	7, 910	7, 354	493	845	3, 857	329	471	296	69	184	202	73	33	502
General paralysis	530	487	22	52	254	39	22	14	10	11	15	9	2	37
Alcoholic	292	287	9	31	161	16	16	8	2	2	4	2	---	36
Manic-depressive	1, 385	1, 304	58	113	641	56	107	67	14	53	76	26	5	88
Dementia præcox	4, 738	4, 433	315	549	2, 395	190	285	170	33	99	77	22	23	275
Epileptic	131	112	19	20	39	8	3	4	1	1	2	---	---	13
Other forms	834	731	70	80	367	20	38	33	9	18	28	12	3	53
Nervous diseases and injuries	6, 916	6, 116	349	575	3, 437	266	406	286	65	134	141	72	14	371
Chorea	264	252	8	24	164	4	22	11	3	7	1	2	---	6
Hemiplegia	258	210	8	23	126	7	10	9	2	4	7	4	2	8
Injuries to nervous system	554	428	22	56	218	28	30	22	3	11	12	5	---	21
Meningitis	279	242	24	26	126	6	19	14	1	7	6	---	1	12
Multiple sclerosis	511	483	28	51	271	33	26	11	6	10	5	1	2	39
Neuritis	222	213	9	15	112	6	20	17	3	8	7	2	---	14
Paralysis	340	282	11	20	157	12	28	28	1	9	3	2	---	11
Poliomyelitis	211	191	12	18	106	8	14	14	3	4	2	3	---	7
Sciatica	137	127	7	19	61	10	6	4	2	3	5	1	---	9
Syphilis C. N. S.	2, 462	2, 161	146	197	1, 277	94	133	74	16	30	42	17	4	131
Tuberc dorsalis	333	294	17	11	152	13	15	14	4	5	14	7	2	40
Tic	200	183	9	20	104	6	12	7	3	8	3	5	---	6
Tremor	243	212	15	26	126	5	6	8	2	9	2	3	2	8
Other forms	902	838	33	69	437	34	65	53	16	19	32	20	1	59
Epilepsy	6, 388	5, 273	550	671	2, 786	272	294	174	34	71	37	16	23	345
Constitutional psychopathic states	6, 196	5, 941	469	639	3, 331	191	408	265	54	163	147	68	21	185
Endocrinopathies	4, 805	4, 506	250	454	2, 683	154	317	226	52	111	91	25	9	134
Drug addiction	2, 020	1, 823	69	137	1, 144	126	146	56	10	32	33	12	4	54
Alcoholism	1, 858	1, 834	84	152	998	311	87	40	14	15	16	6	2	109
Total	69, 394	60, 993	8, 752	9, 559	29, 328	2, 425	2, 967	1, 884	414	993	923	393	211	3, 144

TABLE 23.—*Schooling of neuropsychiatric cases—Continued*

Diagnoses	Colored										
	Total	None	Grades			High school			College		
			1 to 3	4 to 8	Unascertained	1 to 2 years	3 to 4 years	Unascertained	1 to 2 years	3 to 4 years	Unascertained
Mental deficiency.....	4,055	2,788	877	251	78	4	1				
Psychoneuroses.....	1,100	404	315	312	24	9	9	1	4	7	
Psychoses.....	556	173	140	160	45	5	2	1	5	1	
General paralysis.....	43	14	12	8	4	1			1		
Alcoholic.....	5		1	3	1						
Manic-depressive.....	81	17	19	28	8				2	1	
Dementia præcox.....	305	93	85	85	27	3	2		1		
Epileptic.....	19	8	5	4	1				1		
Other forms.....	103	41	18	32	4	1		1			
Nervous diseases and injuries.....	800	238	216	284	24	10	8		1	3	
Chorea.....	12	4	4	4							
Hemiplegia.....	48	13	16	16	2				1		
Injuries to nervous system.....	126	42	38	35	6		2				
Meningitis.....	37	8	13	12	2	1					
Multiple sclerosis.....	28	10	7	10			1				
Neuritis.....	9	3	2	2	1						
Paralysis.....	58	15	16	25	1	1					
Poliomyelitis.....	20	4	8	7		1					
Sciatica.....	10	4	2	4							
Syphilis C. N. S.....	301	82	81	112	5	6	2		2		
Tabes dorsalis.....	39	17	7	14	1						
Tic.....	17	3	3	9	1		1				
Tremor.....	31	9	6	13		1	2				
Other forms.....	64	24	13	21	5						
Epilepsy.....	1,115	472	301	280	25	8	12		3	2	1
Constitutional psychopathic states.....	255	64	69	105	4	7		1	3	1	
Endocrinopathies.....	299	74	82	126	5	4	1	1	1	1	
Drug addiction.....	197	14	30	117	14	10	4	1	2		
Alcoholism.....	24	3	6	10	3	2					
Total.....	8,401	4,230	2,036	1,645	222	59	37	5	19	15	2

The facts clearly indicate that the neuropsychiatric cases did not measure up to the educational standards of the average soldier. This may be due to the large number of mental defectives included in the group of neuropsychiatric cases. Further comparisons will be made in the discussion of the different groups of neuropsychiatric cases.

ECONOMIC CONDITION

In compiling information on the economic condition, the cases were placed into two groups: Those in marginal and those in comfortable circumstances. (See Table 24.) Persons were considered as being in marginal circumstances who were not able to live without working for four months, without becoming objects of charity. This classification does not include "dependents" as the number of dependent men accepted by local boards was negligible. The table shows that 50,181, or 87 per cent of the whites and 8,005, or 97 per cent of the colored neuropsychiatric cases were in marginal circumstances.

The facts give no light on the question of whether poverty is the cause or the result of mental disease or defect. They do, however, show a close relationship

and agree with previous statistics, the best of which have been compiled by the New York State Hospital Commission, that neuropsychiatric disorders are relatively more frequent among persons in marginal circumstances.

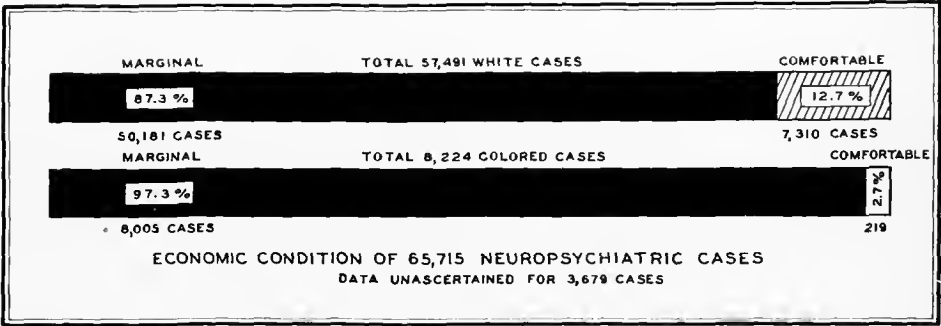


CHART XI

TABLE 24.—*Economic condition of neuropsychiatric cases*

Diagnoses	Total	White				Colored			
		Total	Marginal	Comfortable	Unascertained	Total	Marginal	Comfortable	Unascertained
Mental deficiency.....	21,858	17,803	15,865	927	1,011	4,055	3,951	32	72
Psychoneuroses.....	11,443	10,343	7,992	1,901	450	1,100	1,037	37	26
Psychoses.....	7,910	7,354	5,777	1,053	524	556	493	38	25
General paralysis.....	530	487	362	88	37	43	38	3	2
Alcoholic.....	292	287	233	32	22	5	5		
Manic-depressive.....	1,385	1,304	941	268	95	81	75	4	2
Dementia præcox.....	4,738	4,433	3,654	481	298	305	266	25	14
Epileptic.....	131	112	88	13	11	19	17	1	1
Other forms.....	834	731	499	171	61	103	92	5	6
Nervous diseases and injuries.....	6,916	6,116	4,618	1,035	463	800	739	41	20
Chorea.....	264	252	213	34	5	12	11	1	
Hemiplegia.....	258	210	170	29	11	48	44	2	2
Injuries to nervous system.....	554	428	325	71	32	126	118	5	3
Meningitis.....	279	242	196	33	13	37	37		
Multiple sclerosis.....	511	483	351	75	57	28	26	2	
Neuritis.....	222	213	135	60	18	9	7	1	1
Paralysis.....	340	282	201	65	16	58	53	4	1
Poliomyelitis.....	211	191	155	27	9	20	18	2	
Sciatica.....	137	127	91	30	6	10	9		1
Syphilis C. N. S.....	2,462	2,161	1,698	313	150	301	277	14	10
Tabes dorsalis.....	333	294	190	65	39	39	36	3	
Tic.....	200	183	144	30	9	17	15	2	
Tramor.....	243	212	170	28	14	31	29	1	1
Other forms.....	902	838	579	175	84	64	59	4	1
Epilepsy.....	6,388	5,273	4,355	602	316	1,115	1,061	35	19
Constitutional psychopathic states.....	6,196	5,941	4,801	791	349	255	233	12	10
Endocrinopathies.....	4,805	4,506	3,567	704	235	299	290	8	1
Drug addiction.....	2,020	1,823	1,602	159	62	197	177	16	4
Alcoholism.....	1,858	1,834	1,604	138	92	24	24		
Total.....	69,394	60,993	50,181	7,310	3,502	8,401	8,005	219	177

VENEREAL DISEASE

Data on venereal infections at some time previous to entering the service were obtained from statements of the soldiers comprising this series. (See Table 25.) Verifications of the statements, being difficult, were not made except in such instances as required Wassermann examinations.

The usual motive for denying the existence of venereal disease did not exist in the Army, and neuropsychiatric examiners were impressed with the frankness with which soldiers spoke of their past life in this respect. The

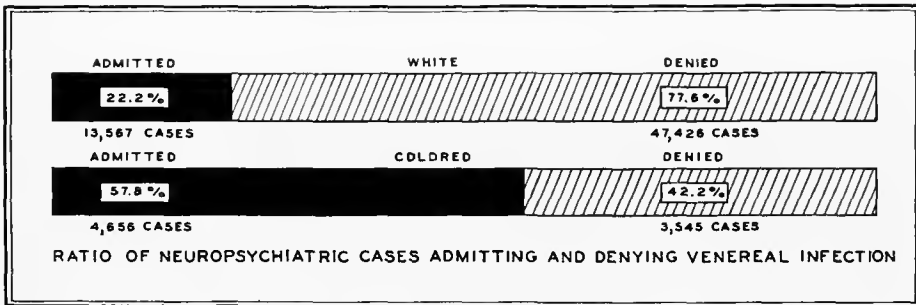


CHART XII

figures here presented must stand by themselves, as the Army statistics relative to venereal diseases refer only to the actual existence of them, not to past

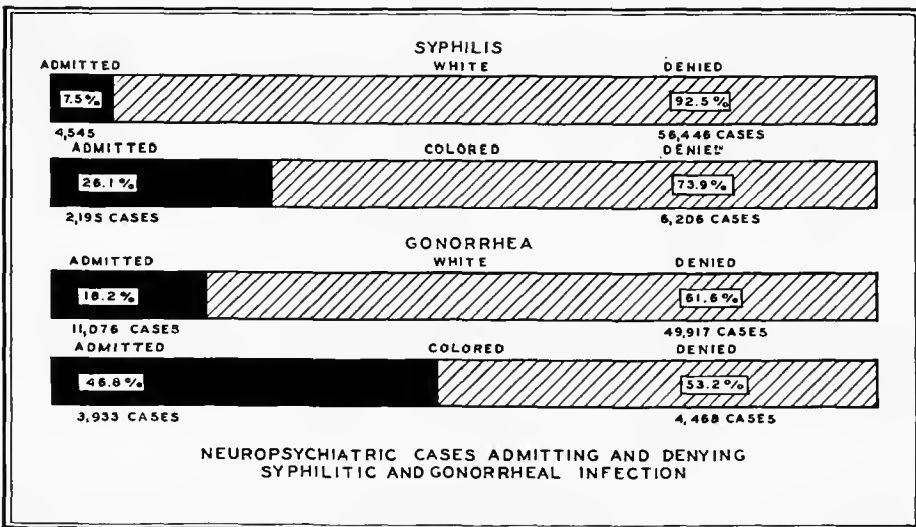


CHART XIII

histories. It is impossible, therefore, to state how the neuropsychiatric individuals compared with soldiers in general as to a venereal history.

Table 25 shows the great predominance of history of preceding venereal infection in the colored cases.

TABLE 25.—*Neuropsychiatric cases admitting and denying venereal infection previous to entering the Army*

Diagnoses	Total	White						
		Total	Syphilis		Gonorrhea		Other venereal infection	
			Admitted	Denied	Admitted	Denied	Admitted	Denied
Mental deficiency.....	21,858	17,803	517	17,286	2,231	15,572	171	17,632
Psychoneuroses.....	11,443	10,343	446	9,897	1,860	8,483	114	10,229
Psychoses.....	7,910	7,354	640	6,714	1,409	5,945	163	7,191
General paralysis.....	530	487	255	232	159	328	19	468
Alcoholic.....	292	287	35	252	93	194	11	276
Manic-depressive.....	1,385	1,304	69	1,235	256	1,048	29	1,275
Dementia præcox.....	4,738	4,433	205	4,228	752	3,681	83	4,350
Epileptic.....	131	112	2	110	18	94	2	110
Other forms.....	834	731	74	657	131	600	19	712
Nervous diseases and injuries.....	6,916	6,116	1,669	4,447	1,594	4,522	176	5,940
Chorea.....	264	252	11	241	35	217	3	249
Hemiplegia.....	258	210	26	184	45	165	4	206
Injuries to nervous system.....	554	428	23	405	79	349	4	424
Meningitis.....	279	242	4	238	32	210	2	240
Multiple sclerosis.....	511	483	16	467	88	395	1	482
Neuritis.....	222	213	5	208	35	178	2	211
Paralysis.....	340	282	15	267	52	230	5	277
Poliomyelitis.....	211	191	6	185	27	164	2	189
Sciatica.....	137	127	7	120	26	101	3	124
Syphilis C. N. S.....	2,462	2,161	1,345	816	862	1,299	102	2,059
Tabes dorsalis.....	333	294	135	159	107	187	11	283
Tic.....	200	183	8	175	29	154	2	181
Tremor.....	243	212	22	190	38	174	7	205
Other forms.....	902	838	46	792	139	699	28	810
Epilepsy.....	6,388	5,273	182	5,091	819	4,454	69	5,204
Constitutional psychopathic states.....	6,196	5,941	360	5,581	1,142	4,799	117	5,824
Endocrinopathies.....	4,805	4,506	131	4,375	591	3,915	46	4,460
Drug addiction.....	2,020	1,823	390	1,433	847	976	74	1,749
Alcoholism.....	1,858	1,834	210	1,624	583	1,251	39	1,795
Total.....	69,394	60,993	4,545	56,448	11,076	49,917	969	60,024

Diagnoses	Total	Colored					
		Syphilis		Gonorrhea		Other venereal infection	
		Admitted	Denied	Admitted	Denied	Admitted	Denied
Mental deficiency.....	4,055	949	3,106	1,846	2,209	166	3,889
Psychoneuroses.....	1,100	240	860	506	594	65	1,035
Psychoses.....	556	145	411	220	336	25	531
General paralysis.....	43	31	12	17	26	5	38
Alcoholic.....	5	2	3	3	2	—	5
Manic-depressive.....	81	9	72	33	48	4	77
Dementia præcox.....	305	58	247	117	188	10	295
Epileptic.....	19	6	13	8	11	4	15
Other forms.....	103	39	64	42	61	2	101
Nervous diseases and injuries.....	800	349	451	404	396	39	761
Chorea.....	12	5	7	3	9	—	12
Hemiplegia.....	48	20	28	24	24	4	44
Injuries to nervous system.....	126	31	95	66	60	5	121
Meningitis.....	37	8	29	9	28	—	37
Multiple sclerosis.....	28	9	19	14	14	—	28
Neuritis.....	9	2	7	5	4	—	9
Paralysis.....	58	15	43	32	26	1	57
Poliomyelitis.....	20	6	14	13	7	—	20
Sciatica.....	10	2	8	5	5	—	10
Syphilis C. N. S.....	301	188	113	153	148	23	278
Tabes dorsalis.....	39	30	9	22	17	2	37
Tic.....	17	7	10	6	11	1	16
Tremor.....	31	10	21	21	10	1	30
Other forms.....	64	16	48	31	33	2	62
Epilepsy.....	1,115	273	842	557	558	45	1,070
Constitutional psychopathic states.....	255	71	184	133	122	9	246
Endocrinopathies.....	299	85	214	148	151	18	281
Drug addiction.....	197	75	122	112	85	16	181
Alcoholism.....	24	8	16	7	17	1	23
Total.....	8,401	2,195	6,206	3,933	4,468	384	8,017

TABLE 25.—*Neuropsychiatric cases admitting and denying venereal infection previous to entering the Army*

Diagnoses	Total	White						
		Total	Syphilis		Gonorrhea		Other venereal infection	
			Admitted	Denied	Admitted	Denied	Admitted	Denied
Mental deficiency.....	21,858	17,803	517	17,286	2,231	15,572	171	17,632
Psychoneuroses.....	11,443	10,343	446	9,897	1,860	8,483	114	10,229
Psychoses.....	7,910	7,354	640	6,714	1,409	5,945	163	7,191
General paralysis.....	530	487	255	232	159	328	19	468
Alcoholic.....	292	287	35	252	93	194	11	276
Manic-depressive.....	1,385	1,304	69	1,235	256	1,048	29	1,275
Dementia praecox.....	4,738	4,433	205	4,228	752	3,681	83	4,350
Epileptic.....	131	112	2	110	18	94	2	110
Other forms.....	834	731	74	657	131	600	19	712
Nervous diseases and injuries.....	6,916	6,116	1,669	4,447	1,594	4,522	176	5,940
Chorea.....	264	252	11	241	35	217	3	249
Hemiplegia.....	258	210	26	184	45	165	4	206
Injuries to nervous system.....	554	428	23	405	79	349	4	424
Meningitis.....	279	242	4	238	32	210	2	240
Multiple sclerosis.....	511	483	16	467	88	395	1	482
Neuritis.....	222	213	5	208	35	178	2	211
Paralysis.....	340	282	15	267	52	230	5	277
Poliomyelitis.....	211	191	6	185	27	164	2	189
Sciatica.....	137	127	7	120	26	101	3	124
Syphilis C. N. S.....	2,462	2,161	1,345	816	862	1,299	102	2,059
Tabes dorsalis.....	333	294	135	159	107	187	11	283
Tic.....	200	183	8	175	29	154	2	181
Tremor.....	243	212	22	190	38	174	7	205
Other forms.....	902	838	46	792	139	699	28	810
Epilepsy.....	6,388	5,273	182	5,091	819	4,454	69	5,204
Constitutional psychopathic states.....	6,196	5,941	360	5,581	1,142	4,799	117	5,824
Endocrinopathies.....	4,805	4,506	131	4,375	591	3,915	46	4,460
Drug addiction.....	2,020	1,823	390	1,433	847	976	74	1,749
Alcoholism.....	1,858	1,834	210	1,624	583	1,251	39	1,795
Total.....	69,394	60,993	4,545	56,448	11,076	49,917	969	60,024

Diagnoses	Total	Colored					
		Syphilis		Gonorrhea		Other venereal infection	
		Admitted	Denied	Admitted	Denied	Admitted	Denied
Mental deficiency.....	4,055	949	3,106	1,846	2,209	166	3,889
Psychoneuroses.....	1,100	240	860	506	594	65	1,035
Psychoses.....	556	145	411	220	336	25	531
General paralysis.....	43	31	12	17	26	5	38
Alcoholic.....	5	2	3	3	2	—	5
Manic-depressive.....	81	9	72	33	48	4	77
Dementia praecox.....	305	58	247	117	188	10	295
Epileptic.....	19	6	13	8	11	4	15
Other forms.....	103	39	64	42	61	2	101
Nervous diseases and injuries.....	800	349	451	404	396	39	761
Chorea.....	12	5	7	3	9	—	12
Hemiplegia.....	48	20	28	24	24	4	44
Injuries to nervous system.....	126	31	95	66	60	5	121
Meningitis.....	37	8	29	9	28	—	37
Multiple sclerosis.....	28	9	19	14	14	—	28
Neuritis.....	9	2	7	5	4	—	9
Paralysis.....	58	15	43	32	26	1	57
Poliomyelitis.....	20	6	14	13	7	—	20
Sciatica.....	10	2	8	5	5	—	10
Syphilis C. N. S.....	301	188	113	153	148	23	278
Tabes dorsalis.....	39	30	9	22	17	2	37
Tic.....	17	7	10	6	11	1	16
Tremor.....	31	10	21	21	10	1	30
Other forms.....	64	16	48	31	33	2	62
Epilepsy.....	1,115	273	842	557	558	45	1,070
Constitutional psychopathic states.....	255	71	184	133	122	9	246
Endocrinopathies.....	299	85	214	148	151	18	281
Drug addiction.....	197	75	122	112	85	16	181
Alcoholism.....	24	8	16	7	17	1	23
Total.....	8,401	2,195	6,206	3,933	4,468	384	8,017

MARITAL STATUS

Table 27 shows the marital status of the neuropsychiatric cases. Therein it is seen that 54,166, or 78 per cent, of the 69,394 neuropsychiatric cases were single, as compared with 89.5 per cent of the draft men (Class I) who were single.⁴ Marriages in both groups include widowed and divorced. There are

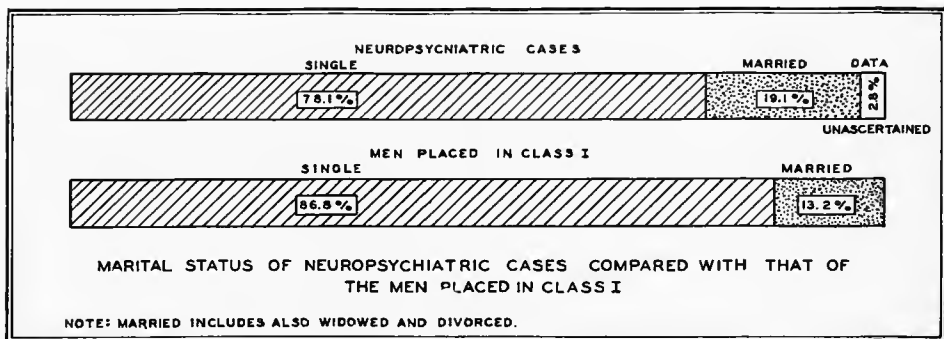


CHART XV

several explanations for the excess in the percentages of married men among the neuropsychiatric cases: One was the tendency of the local boards to place in Class I men who had no families to support; another is the probability that

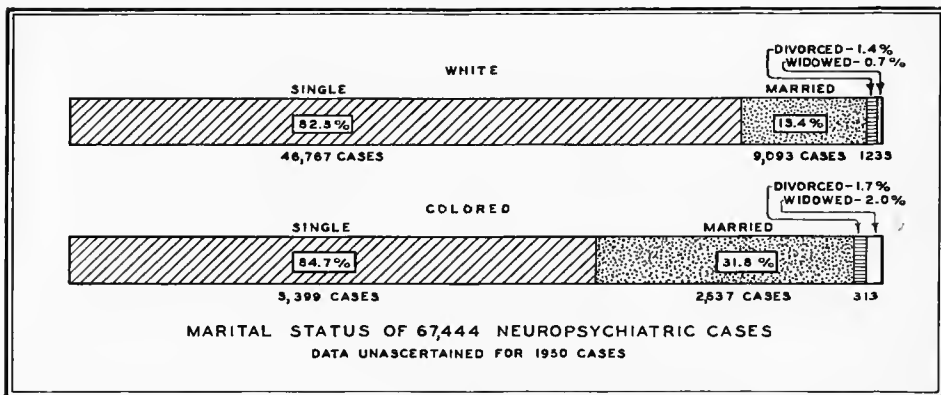


CHART XVI

some benedicts enlisted on account of domestic troubles, which are frequent among those handicapped by nervous and mental disease or defects.

It will be noticed that the number of marriages among the colored exceeds that of the whites, the ratio more than double, and that there is a very slight increase in the ratio of divorces among the colored.

TABLE 27.—*Marital status of neuropsychiatric cases*

Diagnoses	Total	White						Colored					
		Total	Single	Married	Widowed	Divorced	Unascertained	Total	Single	Married	Widowed	Divorced	Unascertained
Mental deficiency.....	21,858	17,803	15,161	1,813	87	128	614	4,055	2,724	1,158	85	73	15
Psychoneuroses.....	11,443	10,343	7,882	2,062	56	131	212	1,100	670	381	21	21	7
Psychoses.....	7,910	7,354	5,989	932	69	115	249	556	359	160	11	8	18
General paralysis.....	530	487	322	105	16	27	17	43	26	14	1	-----	2
Alcoholic.....	292	287	221	31	7	20	8	5	3	-----	1	1	-----
Manic-depressive.....	1,385	1,304	1,018	209	10	19	48	81	50	24	3	1	3
Dementia præcox.....	4,738	4,433	3,798	440	29	35	131	305	201	87	3	3	11
Epileptic.....	131	112	86	19	-----	2	5	19	11	7	1	-----	-----
Other forms.....	834	731	544	128	7	12	40	103	68	28	2	3	2
Nervous diseases and injuries	6,916	6,116	4,553	1,128	69	122	244	800	483	263	23	22	9
Chorea.....	264	252	199	46	1	3	3	12	5	6	1	-----	-----
Hemiplegia.....	258	210	170	32	2	4	2	48	35	10	2	1	-----
Injuries to nervous system.....	554	428	316	83	1	6	22	126	71	42	5	4	4
Meningitis.....	279	242	191	44	1	3	3	37	26	11	-----	-----	-----
Multiple sclerosis.....	511	483	382	67	3	8	23	28	21	7	-----	-----	-----
Neuritis.....	222	213	161	40	3	3	6	9	4	5	-----	-----	-----
Paralysis.....	340	282	228	43	1	-----	10	58	37	18	1	2	-----
Poliomyelitis.....	211	191	163	24	-----	-----	4	20	15	4	-----	-----	1
Sciatica.....	137	127	89	29	1	3	5	10	9	1	-----	-----	-----
Syphilis C. N. S.....	2,462	2,161	1,552	436	35	68	70	301	172	105	8	12	4
Tabes dorsalis.....	333	294	186	59	10	9	30	39	19	18	2	-----	-----
Tic.....	200	183	136	36	1	4	6	17	8	8	1	-----	-----
Tremor.....	243	212	167	33	3	2	7	31	18	9	1	3	-----
Other forms.....	902	838	613	156	7	9	53	64	43	19	2	-----	-----
Epilepsy.....	6,388	5,273	4,009	926	47	68	223	1,115	662	420	18	12	3
Constitutional psychopathic states.....	6,196	5,941	4,857	803	31	83	167	255	162	89	2	2	-----
Endocrinopathies.....	4,805	4,506	3,570	792	21	28	95	299	197	94	7	1	-----
Drug addiction.....	2,020	1,823	1,367	355	20	41	40	197	125	66	4	2	-----
Alcoholism.....	1,858	1,834	1,379	282	45	74	54	24	17	6	-----	-----	-----
Total.....	69,394	60,993	48,767	9,093	445	790	1,898	8,401	5,399	2,637	171	142	52

HOME ENVIRONMENT—URBAN OR RURAL

Neuropsychiatric examiners were instructed to classify all places of 2,500 people or over as urban, in accordance with the classification used in the reports of the United States Census Bureau.

In the examination of the records of 200,000 selected registrants from urban and rural districts, 21.7 per cent of those from urban districts were rejected, while the rejections from the rural districts were 16.9 per cent.⁵ In other words, according to the Provost Marshal General, considerable physical advantage accrues to the boy reared in the country.⁵ Of the general population of the United States, 49 per cent of the whites and 73 per cent of the colored reside in rural districts.

Table 28, which shows the home environment of the neuropsychiatric cases during the World War indicates no striking difference between the percentage of white and colored population and the percentage of white and colored neuropsychiatric cases living in the urban and rural communities. A slightly higher rate of neuropsychiatric cases is to be found among people living in the cities, but in individual clinical conditions there is more variation as between urban and rural environments.

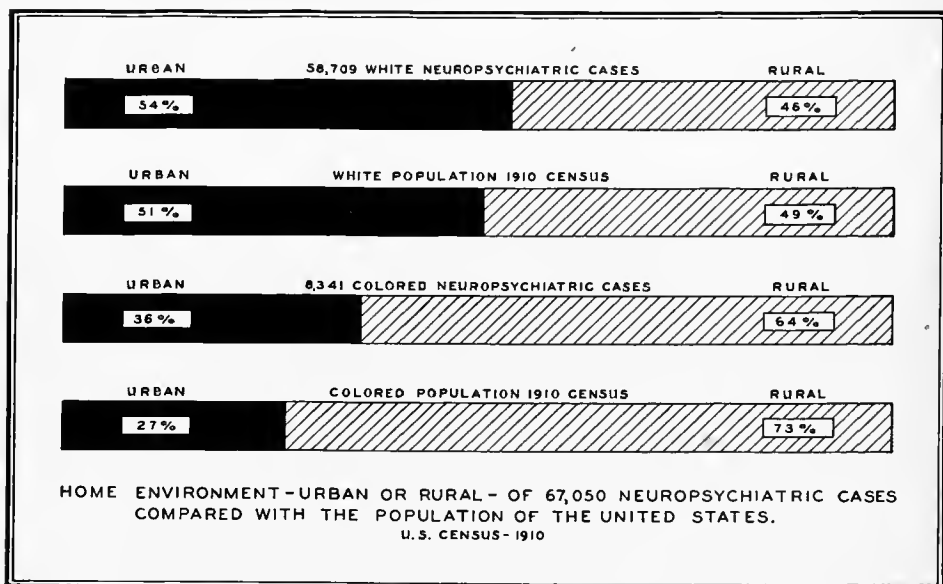


CHART XVII

TABLE 28.—Home environment of neuropsychiatric cases

Diagnoses	Total	White				Colored			
		Total	Urban	Rural	Unas- certained	Total	Urban	Rural	Unas- certained
Mental deficiency.....	21,858	17,803	6,081	11,022	700	4,055	1,088	2,944	23
Psychoneuroses.....	11,443	10,343	5,889	4,167	287	1,100	429	666	5
Psychoses.....	7,910	7,354	4,228	2,759	367	556	216	323	17
General paralysis.....	530	487	374	87	26	43	28	14	1
Alcoholic.....	292	287	209	63	15	5	2	3	—
Manic-depressive.....	1,385	1,304	800	438	66	81	24	54	3
Dementia præcox.....	4,738	4,433	2,400	1,837	196	305	118	178	9
Epileptic.....	131	112	55	49	8	19	6	13	—
Other forms.....	834	731	390	285	56	103	38	61	4
Nervous diseases and injuries.....	6,916	6,116	3,703	2,127	286	800	406	385	9
Chorea.....	264	252	131	115	6	12	6	5	1
Hemiplegia.....	258	210	116	85	9	48	19	28	1
Injuries to nervous system.....	554	428	242	167	19	126	52	71	3
Meningitis.....	279	242	110	125	7	37	23	14	—
Multiple sclerosis.....	511	483	257	198	28	28	14	14	—
Neuritis.....	222	213	121	83	9	9	3	6	—
Paralysis.....	340	282	161	113	8	58	28	30	—
Poliomyelitis.....	211	191	115	72	4	20	6	14	—
Sciatica.....	137	127	72	49	6	10	5	4	1
Syphilis C. N. S.....	2,462	2,161	1,510	565	86	301	178	120	3
Tabes dorsalis.....	333	294	196	69	29	39	20	19	—
Tic.....	200	183	107	68	8	17	10	7	—
Tremor.....	243	212	95	109	8	31	19	12	—
Other forms.....	902	838	470	309	59	64	23	41	—
Epilepsy.....	6,388	5,273	2,802	2,215	256	1,115	391	722	2
Constitutional psychopathic states.....	6,196	5,941	3,672	2,073	196	255	140	113	2
Endocrinopathies.....	4,805	4,506	2,502	1,917	87	299	123	176	—
Drug addiction.....	2,020	1,823	1,614	163	46	197	188	7	2
Alcoholism.....	1,858	1,834	1,470	305	59	24	20	4	—
Total.....	69,394	60,993	31,961	26,748	2,284	8,401	3,001	5,340	60

STATES OF RESIDENCE AND BIRTH (WITH GAIN OR LOSS FROM IMMIGRATION OR MIGRATION)

Table 29 shows the number of residents of each State included in the present series of neuropsychiatric cases. Table 30 shows the State of birth of neuropsychiatric cases. In reference to the occurrence of nervous and mental diseases or defect in the individual States, a question presents itself: Are the cases found among the residents of the State the State's own people? Table 31 shows, by States, the gains or losses of neuropsychiatric cases through foreign immigration and State migration. It will be observed that all but nine States have more cases living in the State than were born there. Table 31 shows in detail whether the problem for each State is one of foreign immigration or is of State migration of either the white or colored. Those interested may ascertain how immigration is related to the State problem in regard to any clinical group. For instance, as concerns mental deficiency in Connecticut and Rhode Island, the foreign-born mental defectives constituted about one-half of all the cases. In New York and Massachusetts about one-third of the cases were of foreign birth. In New Jersey, Pennsylvania, Michigan, California, and Washington the foreign-born equaled from one-fourth to one-fifth of the total. In many of the other States the ratios were from one-sixth to one-ninth of the totals.

Thus it may be determined in reference to any condition how many cases more or less were residing in the State than were born there. For instance, the residents of Alabama gave birth to 435 of the white and 711 of the colored mental defectives. The same State had only 397 of the whites and 656 of the colored mental defectives living there. In other words, the other States had among their mental defectives 38 whites and 55 colored which were received from Alabama (for which the latter State received 9 in return).

The residents of the State of New York gave birth to 814 of the white and 12 of the colored mental defectives, and 412 of the whites came to the State from foreign countries. Deducting the last figure from the total whites, it is found that the State of New York received 45 white and 35 colored mental defectives from the other States.

Calculations similar to the ones made in the preceding paragraphs may be made by those interested for each of the different clinical conditions for every State in the Union. The results may be of no great practical value because of the inability to prevent neuropsychiatric individuals from going where they are taken by their parents. The information may prove useful, however, to those who wish to determine the localities that furnish more than their quota of neuropsychiatric conditions.

TABLE 29.—*State of residence of neuropsychiatric cases*

Diagnoses	United States			Alabama			Arizona			Arkansas			California		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency	21,858	17,803	4,055	1,053	397	656	19	18	1	615	384	231	382	377	5
Psychoneuroses	11,443	10,343	1,100	285	222	63	16	15	1	212	184	28	287	286	1
Psychoses	7,910	7,354	556	179	130	49	22	20	2	100	80	20	300	297	3
General paralysis	530	487	43	7	5	2	1	1	---	4	---	4	9	9	---
Alcoholic	292	287	5	2	2	---	1	1	---	---	---	---	12	12	---
Manic-depressive	1,385	1,304	81	23	22	1	5	4	1	23	21	2	56	56	---
Dementia præcox	4,738	4,433	305	111	85	26	12	12	---	59	50	9	167	165	2
Epileptic	131	112	19	9	7	2	---	---	---	4	2	2	7	7	---
Other forms	834	731	103	27	9	18	3	2	1	10	7	3	49	48	1
Nervous diseases and injuries	6,916	6,116	800	213	109	104	23	22	1	87	63	24	210	208	2
Chorea	264	252	12	9	5	4	---	---	---	2	2	---	11	11	---
Hemiplegia	258	210	48	7	3	4	---	---	---	10	7	3	7	7	---
Injuries to nervous system	554	428	126	52	6	46	2	2	---	3	1	2	7	7	---
Meningitis	279	242	37	2	2	---	2	2	---	3	3	---	15	15	---
Multiple sclerosis	511	483	28	21	16	5	3	3	---	4	3	1	14	14	---
Neuritis	222	213	9	7	5	2	---	---	---	1	1	---	13	13	---
Paralysis	340	282	58	9	2	7	3	3	---	5	4	1	11	11	---
Polio-myelitis	211	191	20	---	---	---	---	---	---	6	5	1	5	5	---
Sciatica	137	127	10	4	3	1	2	2	---	1	1	---	8	8	---
Syphilis C. N. S.	2,462	2,161	301	63	47	16	6	6	---	33	19	14	71	70	1
Tabes dorsalis	333	294	39	10	3	7	1	---	1	1	---	14	14	---	
Tic	200	183	17	7	3	4	---	---	---	2	2	---	4	4	---
Tremor	243	212	31	5	3	2	---	---	---	---	---	---	2	2	---
Other forms	902	838	64	17	11	6	4	4	---	16	14	2	28	27	1
Epilepsy	6,388	5,273	1,115	174	102	72	13	13	---	132	74	58	136	132	4
Constitutional psychopathic states	6,196	5,941	255	112	80	32	14	14	---	61	56	5	218	218	---
Endocrinopathies	4,805	4,506	299	55	44	11	8	8	---	15	12	3	46	46	---
Drug addiction	2,020	1,823	197	14	13	1	6	5	1	24	23	1	76	56	20
Alcoholism	1,858	1,834	24	5	5	---	5	5	---	2	2	---	91	91	---
Total	69,394	60,993	8,401	2,090	1,102	988	126	120	6	1,248	878	370	1,746	1,711	35

Diagnoses	Colorado			Connecticut			Delaware			Florida			Georgia		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency	120	120	---	169	163	6	36	21	15	167	152	15	652	511	141
Psychoneuroses	88	88	---	112	109	3	14	11	3	117	90	27	289	199	90
Psychoses	70	70	---	98	97	1	13	11	2	89	71	18	242	205	37
General paralysis	4	4	---	3	3	---	---	---	---	9	6	3	9	6	3
Alcoholic	---	---	---	5	5	---	3	2	1	1	---	1	6	6	---
Manic-depressive	23	23	---	10	10	---	1	1	---	8	6	2	21	18	3
Dementia præcox	31	31	---	67	66	1	8	7	1	60	50	10	187	162	25
Epileptic	---	---	---	3	3	---	---	---	---	3	2	1	7	5	2
Other forms	12	12	---	10	10	---	1	1	---	8	7	1	12	8	4
Nervous diseases and injuries	52	52	---	48	47	1	15	13	2	69	45	24	241	176	65
Chorea	4	4	---	2	2	---	1	1	---	4	3	1	2	2	---
Hemiplegia	3	3	---	3	3	---	---	---	---	4	1	3	12	5	7
Injuries to nervous system	2	2	---	1	1	---	1	1	---	5	3	2	31	18	13
Meningitis	10	10	---	2	2	---	---	---	---	1	1	---	5	4	1
Multiple sclerosis	5	5	---	5	5	---	1	1	---	4	4	---	19	17	2
Neuritis	2	2	---	1	1	---	---	---	---	3	1	2	3	3	---
Paralysis	3	3	---	5	5	---	---	---	---	2	1	1	19	13	6
Polio-myelitis	---	---	---	2	2	---	---	---	---	4	3	1	31	19	12
Sciatica	1	1	---	2	2	---	---	---	---	---	---	---	5	3	---
Syphilis C. N. S.	12	12	---	12	11	1	7	5	2	28	17	11	65	54	15
Tabes dorsalis	1	1	---	1	1	---	---	---	---	3	2	1	5	5	---
Tic	---	---	---	5	5	---	1	1	---	2	2	---	4	4	---
Tremor	1	1	---	---	---	---	---	---	---	1	---	---	1	1	---
Other forms	9	9	---	6	6	---	4	4	---	8	7	1	37	29	8
Epilepsy	57	57	---	66	65	1	10	7	3	98	55	43	184	121	63
Constitutional psychopathic states	47	46	1	63	63	---	9	8	1	45	43	2	204	181	23
Endocrinopathies	31	31	---	19	19	---	6	6	---	17	17	---	118	93	25
Drug addiction	10	10	---	19	18	1	23	9	14	15	14	1	39	38	1
Alcoholism	10	10	---	30	30	---	6	6	---	2	2	---	10	10	---
Total	485	484	1	624	611	13	132	92	40	619	489	130	1,979	1,534	445

TABLE 29.—*State of residence of neuropsychiatric cases—Continued*

Diagnoses	Idaho			Illinois			Indiana			Iowa			Kansas		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	44	44	---	851	791	60	431	417	14	242	239	3	208	197	11
Psychoneuroses.....	18	17	1	835	819	16	368	358	10	172	168	4	173	166	7
Psychoses.....	43	42	1	562	546	16	162	157	5	160	155	5	97	95	2
General paralysis.....	---	---	---	59	58	1	17	17	---	20	19	1	19	19	---
Alcoholic.....	---	---	---	32	32	---	4	4	---	1	1	---	---	---	---
Manic-depressive.....	8	8	---	92	90	2	34	33	1	19	19	---	14	14	---
Dementia præcox.....	31	30	1	340	328	12	81	79	2	108	106	2	56	54	2
Epileptic.....	---	---	---	4	4	---	3	3	---	4	4	---	2	2	---
Other forms.....	4	4	---	35	34	1	23	21	2	8	6	2	6	6	---
Nervous diseases and injuries.....	14	14	---	446	426	20	259	256	3	94	93	1	130	123	7
Chorea.....	4	4	---	17	17	---	9	9	---	7	7	---	5	5	---
Hemiplegia.....	1	1	---	11	10	1	6	6	---	4	4	---	5	5	---
Injuries to nervous system.....	3	3	---	29	29	---	11	11	---	12	11	1	12	12	---
Meningitis.....	1	1	---	5	5	---	5	5	---	1	1	---	15	13	2
Multiple sclerosis.....	---	---	---	23	23	---	18	18	---	8	8	---	6	6	---
Neuritis.....	---	---	---	13	13	---	3	3	---	4	4	---	4	4	---
Paralysis.....	---	---	---	15	14	1	14	14	---	6	6	---	1	1	---
Poliomyelitis.....	---	---	---	11	11	---	6	6	---	8	8	---	1	1	---
Sciatica.....	---	---	---	12	11	1	5	5	---	2	2	---	2	2	---
Syphilis, C. N. S.....	2	2	---	214	202	12	112	110	2	26	26	---	51	46	5
Tubes dorsalis.....	---	---	---	19	18	1	14	14	---	---	---	---	12	12	---
Tic.....	1	1	---	10	10	---	8	8	---	2	2	---	1	1	---
Tremor.....	---	---	---	14	12	2	12	12	---	3	3	---	2	2	---
Other forms.....	2	2	---	53	51	2	36	35	1	11	11	---	10	10	---
Epilepsy.....	13	13	---	356	330	26	141	135	6	85	79	6	60	58	2
Constitutional psychopathic states.....	11	11	---	366	362	4	261	259	2	88	88	---	97	90	7
Endocrinopathies.....	24	24	---	391	389	2	150	148	2	77	77	---	151	140	11
Drug addiction.....	---	---	---	59	59	---	12	11	1	29	25	4	27	23	4
Alcoholism.....	---	---	---	247	245	2	50	50	---	21	20	1	20	20	---
Total.....	167	165	2	4,113	3,967	146	1,834	1,791	43	968	944	24	963	912	51

Diagnoses	Kentucky			Louisiana			Maine			Maryland			Massachusetts		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	838	771	67	607	275	332	202	202	---	715	396	319	407	400	7
Psychoneuroses.....	303	262	41	354	295	59	51	51	---	141	117	24	286	281	5
Psychoses.....	138	130	8	133	87	46	30	30	---	113	92	21	225	224	1
General paralysis.....	8	8	---	9	4	5	---	---	---	13	8	5	12	12	---
Alcoholic.....	6	6	---	1	1	---	---	---	---	4	4	---	15	15	---
Manic-depressive.....	34	32	2	27	18	9	8	8	---	9	7	2	36	35	1
Dementia præcox.....	58	58	---	73	48	25	20	20	---	67	58	9	146	146	---
Epileptic.....	3	2	1	3	2	1	2	2	---	1	---	---	1	1	---
Other forms.....	29	24	5	20	14	6	---	---	---	19	14	5	15	15	---
Nervous diseases and injuries.....	245	221	24	105	59	46	22	21	1	92	67	25	110	108	2
Chorea.....	5	5	---	---	---	---	1	1	---	2	2	---	8	8	---
Hemiplegia.....	2	2	---	3	2	1	---	---	---	5	5	---	1	1	---
Injuries to nervous system.....	14	13	1	4	2	2	---	---	---	6	3	3	8	7	1
Meningitis.....	6	5	1	10	8	2	---	---	---	3	3	---	---	---	---
Multiple sclerosis.....	17	17	---	4	3	1	1	1	---	10	8	2	11	11	---
Neuritis.....	3	3	---	6	5	1	2	2	---	4	4	---	11	11	---
Paralysis.....	10	4	6	5	4	1	2	2	---	2	1	1	4	4	---
Poliomyelitis.....	3	3	---	1	1	---	---	---	---	3	3	---	3	3	---
Sciatica.....	4	4	---	---	---	---	---	---	---	2	2	---	3	3	---
Syphilis, C. N. S.....	102	94	8	55	25	30	10	10	---	33	21	12	30	30	---
Tubes dorsalis.....	10	9	1	2	---	2	1	1	---	6	5	1	3	3	---
Tic.....	8	8	---	---	---	---	1	1	---	2	2	---	3	3	---
Tremor.....	35	29	6	3	2	1	---	---	---	4	1	3	4	4	---
Other forms.....	26	25	1	12	7	5	4	4	---	10	7	3	20	20	---
Epilepsy.....	178	165	13	277	116	161	36	36	---	63	40	23	163	161	2
Constitutional psychopathic states.....	181	177	4	90	73	17	35	35	---	107	94	13	190	189	1
Endocrinopathies.....	84	79	5	46	22	24	2	2	---	43	39	4	27	27	---
Drug addiction.....	26	22	4	26	24	2	5	5	---	14	14	---	45	42	3
Alcoholism.....	57	49	8	6	6	---	10	10	---	22	22	---	122	122	---
Total.....	2,050	1,876	174	1,644	957	687	393	392	1	1,310	881	429	1,575	1,554	21

TABLE 29.—*State of residence of neuropsychiatric cases—Continued*

Diagnoses	Michigan			Minnesota			Mississippi			Missouri			Montana		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	638	623	15	263	262	1	636	308	328	990	922	68	46	45	1
Psychoneuroses.....	261	256	5	232	231	1	311	202	109	463	434	29	44	43	1
Psychoses.....	294	288	6	166	165	1	132	85	47	243	233	10	56	56	---
General paralysis.....	23	23	---	7	7	---	4	3	1	40	38	2	4	4	---
Alcoholic.....	13	13	---	7	7	---	1	1	---	3	3	---	2	2	---
Manic-depressive.....	54	52	2	24	24	---	26	16	10	43	43	---	16	16	---
Dementia præcox.....	190	188	2	114	113	1	76	52	24	140	133	7	24	24	---
Epileptic.....	2	2	---	---	---	---	5	2	3	2	2	---	---	---	---
Other forms.....	12	10	2	14	14	---	20	11	9	15	14	1	10	10	---
Nervous diseases and injuries.....	240	233	7	132	129	3	131	72	59	356	310	46	30	30	---
Chorea.....	9	9	---	7	7	---	9	6	3	14	14	---	1	1	---
Hemiplegia.....	3	2	1	5	4	1	5	4	1	10	10	---	3	3	---
Injuries to nervous system.....	12	12	---	8	7	1	11	3	8	22	18	4	1	1	---
Meningitis.....	4	4	---	2	2	---	15	14	1	13	12	1	2	2	---
Multiple sclerosis.....	36	36	---	19	19	---	5	4	1	15	11	4	---	---	---
Neuritis.....	9	9	---	10	10	---	---	---	---	6	6	---	4	4	---
Paralysis.....	10	10	---	4	3	1	12	5	7	17	14	3	5	5	---
Polioomyelitis.....	6	6	---	2	2	---	4	1	3	5	5	---	1	1	---
Sciatica.....	---	---	---	2	2	---	2	2	---	6	6	---	2	2	---
Syphilis C. N. S.....	90	88	2	56	56	---	47	23	24	158	134	24	3	3	---
Tabes dorsalis.....	23	21	2	2	2	---	5	2	3	22	20	2	4	4	---
Tic.....	6	6	---	1	1	---	5	2	1	12	11	1	1	1	---
Tremor.....	4	4	---	---	---	---	1	---	---	20	15	5	---	---	---
Other forms.....	28	26	2	14	14	---	12	6	6	36	34	2	3	3	---
Epilepsy.....	188	184	4	94	92	2	229	95	134	194	171	23	32	32	---
Constitutional psychopathic states.....	251	248	3	87	84	3	78	58	20	275	255	20	24	24	---
Endocrinopathies.....	242	239	3	142	142	---	57	18	39	278	231	47	21	21	---
Drug addiction.....	27	24	3	26	26	---	27	27	---	112	82	30	12	10	---
Alcoholism.....	36	36	---	51	51	---	5	5	---	95	89	6	8	8	---
Total.....	2,177	2,131	46	1,193	1,182	11	1,606	870	736	3,006	2,727	279	273	269	4

Diagnoses	Nebraska			Nevada			New Hampshire			New Jersey			New Mexico		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	126	125	1	11	11	---	38	38	---	406	393	13	210	210	---
Psychoneuroses.....	74	73	1	8	7	1	32	32	---	243	237	6	26	24	2
Psychoses.....	77	77	---	11	11	---	14	14	---	198	191	7	19	19	---
General paralysis.....	8	8	---	---	---	---	---	---	---	10	10	---	---	---	---
Alcoholic.....	1	1	---	2	2	---	---	---	---	6	5	1	1	1	---
Manic-depressive.....	12	12	---	2	2	---	3	3	---	47	44	3	4	4	---
Dementia præcox.....	55	55	---	5	5	---	10	10	---	115	113	2	9	9	---
Epileptic.....	---	---	---	---	---	---	---	---	---	2	2	---	---	---	---
Other forms.....	1	1	---	2	2	---	1	1	---	18	17	1	5	5	---
Nervous diseases and injuries.....	67	64	3	11	11	---	10	10	---	104	97	7	26	25	1
Chorea.....	3	3	---	---	---	---	1	1	---	7	7	---	1	1	---
Hemiplegia.....	3	3	---	---	---	---	---	---	---	2	2	---	---	---	---
Injuries to nervous system.....	7	7	---	2	2	---	---	---	---	11	9	2	3	3	---
Meningitis.....	10	10	---	---	---	---	---	---	---	2	2	---	1	1	---
Multiple sclerosis.....	1	1	---	2	2	---	---	---	---	7	7	---	1	1	---
Neuritis.....	2	2	---	---	---	---	1	1	---	4	4	---	3	3	---
Paralysis.....	4	4	---	---	---	---	1	1	---	4	4	---	2	2	---
Polioomyelitis.....	5	5	---	---	---	---	1	1	---	4	4	---	---	---	---
Sciatica.....	---	---	---	---	---	---	---	---	---	3	3	---	---	---	---
Syphilis C. N. S.....	19	18	1	6	6	---	2	2	---	30	26	4	7	7	---
Tabes dorsalis.....	---	---	---	---	---	---	---	---	---	5	4	1	2	2	---
Tic.....	4	4	---	---	---	---	1	1	---	6	6	---	---	---	---
Tremor.....	2	2	---	---	---	---	1	1	---	7	7	---	2	2	---
Other forms.....	7	5	2	1	1	---	2	2	---	13	13	---	3	3	---
Epilepsy.....	39	38	1	5	5	---	14	14	---	190	179	11	29	29	---
Constitutional psychopathic states.....	47	47	---	4	4	---	17	17	---	162	159	3	22	21	1
Endocrinopathies.....	55	53	2	1	1	---	2	2	---	84	81	3	13	12	1
Drug addiction.....	16	13	3	1	1	---	4	4	---	55	43	12	1	1	---
Alcoholism.....	8	8	---	9	9	---	6	6	---	46	46	---	2	2	---
Total.....	509	498	11	61	60	1	137	137	---	1,488	1,426	62	348	343	5

TABLE 29.—*State of residence of neuropsychiatric cases—Continued*

Diagnoses	New York			North Carolina			North Dakota			Ohio			Oklahoma		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	1,318	1,271	47	805	651	154	101	101	---	958	901	57	493	398	95
Psychoneuroses.....	1,187	1,172	15	339	247	92	37	37	---	781	744	37	201	186	15
Psychoses.....	757	746	11	132	112	20	33	33	---	435	427	8	144	141	3
General paralysis.....	43	41	2	4	3	1	---	---	---	36	35	1	5	5	---
Alcoholic.....	47	46	1	1	1	---	---	---	---	19	19	---	5	5	---
Manic-depressive.....	162	157	5	15	10	5	4	4	---	114	113	1	24	23	1
Dementia præcox.....	429	427	2	94	84	10	26	26	---	221	217	4	102	101	1
Epileptic.....	13	13	---	3	3	---	---	---	---	2	2	---	---	---	---
Other forms.....	63	62	1	15	11	4	3	3	---	43	41	2	8	7	1
Nervous diseases and injuries.....	587	566	21	122	92	30	24	24	---	430	411	19	169	152	17
Chorea.....	20	20	---	1	1	---	1	1	---	20	19	1	5	5	---
Hemiplegia.....	20	19	1	4	2	2	1	1	---	12	11	1	8	6	2
Injuries to nervous system.....	65	62	3	11	9	2	4	4	---	22	18	4	10	6	4
Meningitis.....	15	15	---	2	1	1	---	---	---	3	3	---	7	7	---
Multiple sclerosis.....	23	23	---	9	7	2	1	1	---	28	27	1	6	6	---
Neuritis.....	12	12	---	6	5	1	2	2	---	8	8	---	6	6	---
Paralysis.....	40	38	2	10	5	5	2	2	---	12	12	---	14	12	2
Poliomyelitis.....	48	48	---	3	3	---	1	1	---	9	9	---	6	5	1
Sciatica.....	21	21	---	---	---	---	---	---	---	5	4	1	5	5	---
Syphilis C. N. S.....	182	174	8	35	28	7	6	6	---	184	175	9	71	65	6
Tubes dorsalis.....	20	16	4	7	4	3	2	2	---	21	20	1	4	3	1
Tic.....	31	29	2	3	2	1	---	---	---	12	11	1	7	7	---
Tremor.....	14	14	---	6	3	3	---	---	---	29	29	---	7	7	---
Other forms.....	76	75	1	23	22	1	4	4	---	65	65	---	13	12	1
Epilepsy.....	661	639	22	190	134	56	21	21	---	316	291	25	93	80	13
Constitutional psychopathic states.....	847	839	8	63	55	8	27	27	---	334	325	9	8	80	5
Endocrinopathies.....	406	403	3	101	85	16	10	10	---	490	482	8	56	48	8
Drug addiction.....	574	541	33	11	1	1	1	1	---	167	161	6	96	88	8
Alcoholism.....	228	227	1	9	9	---	8	8	---	89	88	1	23	23	---
Total.....	6,565	6,404	161	1,772	1,395	377	262	262	---	3,940	3,770	170	1,360	1,196	164

Diagnoses	Oregon			Pennsylvania			Rhode Island			South Carolina			South Dakota		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	55	55	---	1,641	1,522	119	69	65	4	537	318	219	101	101	---
Psychoneuroses.....	58	58	---	901	861	40	42	42	---	282	144	138	44	44	---
Psychoses.....	60	60	---	643	621	22	23	22	1	85	51	34	32	32	---
General paralysis.....	4	4	---	56	56	---	3	3	---	2	2	---	---	---	---
Alcoholic.....	---	---	---	45	45	---	1	1	---	2	2	---	---	---	---
Manic-depressive.....	9	9	---	96	94	2	1	1	---	14	9	5	4	4	---
Dementia præcox.....	35	35	---	369	353	16	15	15	---	56	31	25	23	23	---
Epileptic.....	2	2	---	7	6	1	---	---	---	2	2	---	---	---	---
Other forms.....	10	10	---	70	67	3	3	3	---	9	5	4	5	5	---
Nervous diseases and injuries.....	27	27	---	547	523	24	18	16	2	103	60	43	39	39	---
Chorea.....	3	3	---	29	28	1	1	1	---	---	---	---	---	---	---
Hemiplegia.....	1	1	---	17	15	2	1	1	---	12	6	6	3	3	---
Injuries to nervous system.....	1	1	---	33	31	2	1	1	---	13	11	2	4	4	---
Meningitis.....	1	1	---	41	37	4	1	1	---	4	2	2	6	6	---
Multiple sclerosis.....	3	3	---	62	60	2	1	1	---	6	5	4	4	4	---
Neuritis.....	---	---	---	22	22	---	---	---	---	6	2	1	3	3	---
Paralysis.....	2	2	---	27	26	1	3	3	---	6	5	1	3	3	---
Poliomyelitis.....	---	---	---	8	8	---	---	---	---	1	1	---	---	---	---
Sciatica.....	---	---	---	9	9	---	---	---	---	1	1	---	---	---	---
Syphilis C. N. S.....	6	6	---	170	160	10	6	4	2	27	11	16	10	10	---
Tubes dorsalis.....	---	---	---	41	39	2	1	1	---	6	3	3	---	---	---
Tic.....	1	1	---	16	16	---	---	---	---	3	3	---	---	---	---
Tremor.....	---	---	---	6	6	---	---	---	---	---	---	---	---	---	---
Other forms.....	9	9	---	66	66	---	3	3	---	18	13	5	4	4	---
Epilepsy.....	29	29	---	461	429	32	22	21	1	158	65	93	20	20	---
Constitutional psychopathic states.....	50	50	---	694	674	20	22	22	---	36	30	6	12	12	---
Endocrinopathies.....	16	16	---	564	556	8	9	9	---	60	45	15	49	49	---
Drug addiction.....	12	8	4	174	157	17	13	11	2	14	14	---	1	1	---
Alcoholism.....	1	1	---	294	293	1	15	15	---	6	6	---	7	7	---
Total.....	308	304	4	5,919	5,636	283	233	223	10	1,281	733	548	305	305	---

TABLE 29.—*State of residence of neuropsychiatric cases—Continued*

Diagnoses	Tennessee			Texas			Utah			Vermont			Virginia		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	1,071	570	501	528	414	114	31	31	---	39	38	1	936	656	280
Psychoneuroses.....	237	190	47	288	240	48	29	29	---	19	19	---	269	174	95
Psychoses.....	152	127	25	328	285	43	28	28	---	15	15	---	180	133	47
General paralysis.....	5	3	2	8	7	1	---	---	---	1	1	---	12	6	6
Alcoholic.....	1	---	1	4	4	---	---	---	---	---	---	---	1	1	---
Manic-depressive.....	28	24	4	42	35	7	4	4	---	1	1	---	30	24	6
Dementia præcox.....	94	81	13	218	195	23	20	20	---	10	10	---	111	84	27
Epileptic.....	2	2	---	6	1	5	---	---	---	---	---	---	4	3	1
Other forms.....	22	17	5	50	43	7	4	4	---	2	2	---	22	15	7
Nervous diseases and injuries.....	194	158	36	245	200	45	9	9	---	12	12	---	152	101	51
Chorea.....	3	2	1	13	13	---	---	---	---	3	3	---	4	3	1
Hemiplegia.....	9	8	1	26	20	6	---	---	---	---	---	---	7	4	3
Injuries to nervous system.....	16	11	5	26	21	5	---	---	---	1	1	---	15	7	8
Meningitis.....	2	---	2	8	3	5	---	---	---	---	---	---	26	19	7
Multiple sclerosis.....	20	20	---	7	6	1	1	1	---	1	1	---	10	9	1
Neuritis.....	4	4	---	10	8	2	---	---	---	---	---	---	4	4	---
Paralysis.....	6	6	---	7	2	5	---	---	---	3	3	---	7	4	---
Polioomyelitis.....	10	10	---	2	2	---	---	---	---	---	---	---	2	1	1
Sciatica.....	3	1	2	11	9	2	1	1	---	---	---	---	2	1	1
Syphilis C. N. S.....	85	67	18	63	54	9	1	1	---	2	2	---	42	24	18
Tabes dorsalis.....	10	9	1	7	7	---	1	1	---	---	---	---	2	2	---
Tic.....	3	1	2	7	4	3	---	---	---	2	2	---	9	8	1
Tremor.....	5	4	1	16	15	1	2	2	---	---	---	---	6	5	1
Other forms.....	18	15	3	42	36	6	3	3	---	---	---	---	14	10	4
Epilepsy.....	156	106	50	299	218	81	12	12	---	10	10	---	140	83	57
Constitutional psychopathic states.....	60	51	9	146	143	3	20	19	1	12	12	---	123	107	16
Endocrinopathies.....	91	67	24	40	38	2	6	6	---	4	4	---	183	158	25
Drug addiction.....	51	46	5	71	66	5	12	12	---	---	---	---	20	17	3
Alcoholism.....	11	10	1	18	18	---	5	5	---	3	3	---	16	14	2
Total.....	2,023	1,325	698	1,963	1,622	341	152	151	1	114	113	1	2,019	1,443	576

Diagnoses	Washington			West Virginia			Wisconsin			Wyoming		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	117	115	2	499	469	30	364	363	1	25	25	---
Psychoneuroses.....	62	62	---	166	153	13	258	258	---	29	28	1
Psychoses.....	78	78	---	109	99	10	170	170	---	10	10	---
General paralysis.....	2	2	---	4	4	---	14	14	---	---	---	---
Alcoholic.....	2	2	---	1	1	---	9	9	---	---	---	---
Manic-depressive.....	5	5	---	20	18	2	44	44	---	5	5	---
Dementia præcox.....	50	50	---	72	64	8	87	87	---	3	3	---
Epileptic.....	2	2	---	4	4	---	5	5	---	---	---	---
Other forms.....	17	17	---	8	8	---	11	11	---	2	2	---
Nervous diseases and injuries.....	36	36	---	121	111	10	157	156	1	13	13	---
Chorea.....	2	2	---	1	1	---	6	6	---	1	1	---
Hemiplegia.....	---	---	---	4	4	---	6	6	---	---	---	---
Injuries to nervous system.....	1	1	---	17	15	2	2	2	---	1	1	---
Meningitis.....	2	2	---	12	11	1	1	1	---	---	---	---
Multiple sclerosis.....	4	4	---	10	10	---	27	27	---	---	---	---
Neuritis.....	---	---	---	2	2	---	7	7	---	1	1	---
Paralysis.....	1	1	---	3	2	1	6	6	---	---	---	---
Polioomyelitis.....	---	---	---	2	2	---	4	4	---	---	---	---
Sciatica.....	---	---	---	---	---	---	1	1	---	---	---	---
Syphilis C. N. S.....	11	11	---	45	40	5	58	57	1	7	7	---
Tabes dorsalis.....	1	1	---	7	7	---	7	7	---	3	3	---
Tic.....	1	1	---	1	1	---	6	6	---	---	---	---
Tremor.....	1	1	---	4	3	1	7	7	---	---	---	---
Other forms.....	12	12	---	13	13	---	19	19	---	---	---	---
Epilepsy.....	33	33	---	84	76	8	94	92	2	10	10	---
Constitutional psychopathic states.....	42	42	---	98	95	3	84	84	---	12	11	1
Endocrinopathies.....	41	41	---	194	190	4	170	170	---	6	6	---
Drug addiction.....	30	30	---	15	13	2	9	9	---	3	3	---
Alcoholism.....	4	4	---	8	8	---	43	43	---	9	9	---
Total.....	443	441	2	1,294	1,214	80	1,349	1,345	4	117	115	2

TABLE 29.—State of residence of neuropsychiatric cases—Continued

Diagnoses	District of Columbia			United States dependencies			State unascertained			Foreign		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	74	26	48	2	2	-----	952	879	73	20	20	-----
Psychoneuroses.....	47	38	9	6	6	-----	323	311	12	23	23	-----
Psychoses.....	39	32	7	4	3	1	442	426	16	25	25	-----
General paralysis.....	2	2	-----	2	1	1	28	26	2	-----	-----	-----
Alcoholic.....	2	2	-----	-----	-----	-----	21	21	-----	1	1	-----
Manic-depressive.....	2	2	-----	-----	-----	-----	76	75	1	3	3	-----
Dementia præcox.....	23	18	5	2	2	-----	244	236	8	14	14	-----
Epileptic.....	1	1	-----	-----	-----	-----	11	11	-----	-----	-----	-----
Other forms.....	9	7	2	-----	-----	-----	62	57	5	7	7	-----
Nervous diseases and injuries.....	35	23	12	4	4	-----	280	269	11	10	10	-----
Chorea.....	-----	-----	-----	-----	-----	-----	6	6	-----	-----	-----	-----
Hemiplegia.....	1	1	-----	-----	-----	-----	9	7	2	2	2	-----
Injuries to nervous system.....	2	1	1	1	1	-----	26	24	2	2	2	-----
Meningitis.....	6	-----	6	-----	-----	-----	6	6	-----	-----	-----	-----
Multiple sclerosis.....	4	4	-----	1	1	-----	22	22	-----	-----	-----	-----
Neuritis.....	-----	-----	-----	-----	-----	-----	10	10	-----	-----	-----	-----
Paralysis.....	2	2	2	-----	-----	-----	8	8	-----	-----	-----	-----
Poliomyelitis.....	2	2	-----	-----	-----	-----	3	2	1	-----	-----	-----
Sciatica.....	2	2	-----	-----	-----	-----	5	5	-----	2	2	-----
Syphilis C. N. S.....	10	8	2	-----	-----	-----	85	79	6	2	2	-----
Tabes dorsalis.....	2	2	-----	-----	-----	-----	23	23	-----	-----	-----	-----
Tic.....	1	1	-----	-----	-----	-----	8	8	-----	-----	-----	-----
Tremor.....	-----	-----	-----	-----	-----	-----	8	8	-----	-----	-----	-----
Other forms.....	3	2	1	2	2	-----	61	61	-----	2	2	-----
Epilepsy.....	18	10	8	3	3	-----	290	281	9	12	12	-----
Constitutional psychopathic states.....	16	14	2	1	1	-----	231	229	2	15	15	-----
Endocrinopathies.....	14	10	4	-----	-----	-----	85	85	-----	5	5	-----
Drug addiction.....	5	4	1	-----	-----	-----	44	42	2	7	7	-----
Alcoholism.....	4	4	-----	-----	-----	-----	71	70	1	4	4	-----
Total.....	252	161	91	20	19	1	2,718	2,592	126	121	121	-----

TABLE 30.—State of birth of neuropsychiatric cases

Diagnoses	United States			Alabama			Arizona			Arkansas			California		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	19,605	15,558	4,047	1,146	435	711	2	2	-----	577	392	185	181	180	1
Psychoneuroses.....	10,011	8,914	1,097	333	245	88	7	7	-----	218	198	20	128	127	-----
Psychoses.....	6,771	6,215	556	204	148	56	7	7	-----	112	90	22	135	135	-----
General paralysis.....	463	420	43	8	5	3	-----	-----	-----	6	1	5	1	1	-----
Alcoholic.....	247	242	5	-----	-----	-----	-----	-----	-----	-----	-----	-----	9	9	-----
Manic-depressive.....	1,170	1,089	81	30	27	3	3	3	-----	23	21	2	23	23	-----
Dementia præcox.....	4,048	3,743	305	129	100	29	4	4	-----	68	59	9	73	73	-----
Epileptic.....	118	99	19	8	6	2	-----	-----	-----	5	3	2	4	4	-----
Other forms.....	725	622	103	29	10	19	-----	-----	-----	10	6	4	25	25	-----
Nervous diseases and injuries.....	6,213	5,415	798	220	110	110	9	9	-----	95	71	24	101	99	2
Chorea.....	255	243	12	10	7	3	-----	-----	-----	3	2	1	5	5	-----
Hemiplegia.....	233	185	48	9	3	6	-----	-----	-----	8	4	4	3	3	-----
Injuries to nervous system.....	500	374	126	53	7	46	1	1	-----	2	1	1	9	9	-----
Meningitis.....	264	227	37	5	5	-----	-----	-----	-----	3	3	-----	9	9	-----
Multiple sclerosis.....	451	423	28	23	19	4	1	1	-----	3	2	1	7	7	-----
Neuritis.....	188	179	9	7	5	2	-----	-----	-----	2	2	-----	6	6	-----
Paralysis.....	314	256	58	7	7	2	2	-----	-----	6	5	1	8	8	-----
Poliomyelitis.....	190	170	20	1	1	-----	-----	-----	-----	7	5	2	3	3	-----
Sciatica.....	112	102	10	4	3	1	1	1	-----	1	1	-----	2	2	-----
Syphilis C. N. S.....	2,189	1,889	300	59	42	17	2	2	-----	38	27	11	30	29	1
Tabes dorsalis.....	295	257	38	10	2	8	1	1	-----	2	1	1	8	7	1
Tic.....	189	172	17	6	2	4	-----	-----	-----	2	2	-----	1	1	-----
Tremor.....	227	196	31	8	3	5	-----	-----	-----	1	1	-----	-----	-----	-----
Other forms.....	806	742	64	18	11	7	1	1	-----	17	15	2	10	10	-----
Epilepsy.....	5,614	4,504	1,110	188	98	90	6	6	-----	121	73	48	63	61	2
Constitutional psychopathic states.....	5,447	5,192	255	129	92	37	9	9	-----	66	57	9	98	98	-----
Endocrinopathies.....	4,423	4,124	299	57	46	11	2	2	-----	25	18	7	19	19	-----
Drug addiction.....	1,890	1,694	196	20	16	4	2	2	-----	29	27	2	33	30	3
Alcoholism.....	1,625	1,601	24	11	10	1	-----	-----	-----	7	7	-----	38	38	-----
Total.....	61,599	53,217	8,382	2,308	1,200	1,108	44	44	-----	1,250	933	317	796	787	9

TABLE 30.—State of birth of neuropsychiatric cases—Continued

Diagnoses	Colorado			Connecticut			Delaware			Florida			Georgia		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	70	69	1	87	83	4	27	17	10	156	136	20	685	504	181
Psychoneuroses.....	52	50	2	58	56	2	12	8	4	95	73	22	299	197	102
Psychoses.....	42	42	—	53	53	—	14	12	2	74	59	15	235	190	45
General paralysis.....	—	—	—	3	3	—	—	—	—	4	3	1	11	7	4
Alcoholic.....	—	—	—	4	4	—	3	2	1	1	1	—	3	3	—
Manic-depressive.....	12	12	—	8	8	—	1	1	—	6	4	—	26	21	5
Dementia præcox.....	27	27	—	31	31	—	6	5	1	53	43	10	176	148	28
Epileptic.....	—	—	—	1	1	—	—	—	—	2	2	1	6	4	2
Other forms.....	3	3	—	6	6	—	4	4	—	7	6	1	13	7	6
Nervous diseases and injuries.....	29	29	—	31	31	—	12	9	3	61	36	25	249	169	80
Chorea.....	2	2	—	2	2	—	2	1	1	3	2	1	2	2	—
Hemiplegia.....	2	2	—	1	1	—	—	—	—	4	1	3	13	6	7
Injuries to nervous system.....	2	2	—	2	2	—	1	1	—	9	4	5	28	15	13
Meningitis.....	5	5	—	2	2	—	—	—	—	1	1	—	5	4	1
Multiple sclerosis.....	2	2	—	3	3	—	—	—	—	3	3	—	18	16	2
Neuritis.....	—	—	—	1	1	—	—	—	—	3	1	2	3	3	—
Paralysis.....	2	2	—	2	2	—	1	1	—	1	1	—	21	14	7
Poliomyelitis.....	—	—	—	1	1	—	—	—	—	4	3	1	30	18	12
Sciatica.....	—	—	—	2	2	—	—	—	—	—	—	—	2	1	1
Syphilis C. N. S.....	6	6	—	8	8	—	6	4	2	22	12	10	81	56	25
Tabes dorsalis.....	1	1	—	—	—	—	—	—	—	5	5	—	6	4	—
Tic.....	1	1	—	2	2	—	—	—	—	1	1	—	2	1	1
Tremor.....	1	1	—	1	1	—	—	—	—	2	—	2	6	4	2
Other forms.....	5	5	—	4	4	—	2	2	—	3	2	1	32	25	7
Epilepsy.....	34	34	—	46	45	1	10	9	1	68	38	30	201	125	76
Constitutional psychopathic states.....	23	23	—	49	49	—	9	7	2	40	37	3	197	174	23
Endocrinopathies.....	25	25	—	15	15	—	9	9	—	15	14	1	111	85	26
Drug addiction.....	7	7	—	14	12	2	14	8	6	11	9	2	45	37	8
Alcoholism.....	7	7	—	23	23	—	6	6	—	11	—	—	11	11	—
Total.....	289	286	3	376	367	9	113	85	28	520	402	118	2,033	1,492	541

Diagnoses	Idaho			Illinois			Indiana			Iowa			Kansas		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	23	23	—	676	660	16	410	401	9	277	275	2	207	201	6
Psychoneuroses.....	8	8	—	654	647	7	356	352	4	197	196	1	181	172	9
Psychoses.....	14	14	—	414	408	6	176	172	4	164	164	—	114	109	5
General paralysis.....	—	—	—	42	41	1	23	23	—	18	18	—	14	13	1
Alcoholic.....	—	—	—	24	24	—	7	7	—	5	5	—	—	—	—
Manic-depressive.....	5	5	—	73	72	1	34	33	1	21	21	—	18	17	1
Dementia præcox.....	8	8	—	243	239	4	82	79	3	106	106	—	69	66	3
Epileptic.....	1	1	—	—	—	—	2	2	—	4	4	—	2	2	—
Other forms.....	—	—	—	32	32	—	28	28	—	10	10	—	11	11	—
Nervous diseases and injuries.....	13	13	—	363	359	4	250	247	3	145	145	—	124	121	3
Chorea.....	4	4	—	18	18	—	10	10	—	9	9	—	5	5	—
Hemiplegia.....	—	—	—	14	14	—	5	5	—	3	3	—	3	3	—
Injuries to nervous system.....	1	1	—	25	25	—	12	12	—	11	11	—	10	9	1
Meningitis.....	—	—	—	5	5	—	6	6	—	4	4	—	12	12	—
Multiple sclerosis.....	2	2	—	21	21	—	21	21	—	10	10	—	5	5	—
Neuritis.....	—	—	—	9	9	—	8	8	—	9	9	—	3	3	—
Paralysis.....	—	—	—	12	12	—	12	12	—	5	5	—	6	6	—
Poliomyelitis.....	—	—	—	12	12	—	7	7	—	8	8	—	1	1	—
Sciatica.....	—	—	—	7	7	—	7	7	—	7	7	—	2	2	—
Syphilis C. N. S.....	6	6	—	159	156	3	90	89	1	45	45	—	50	48	2
Tabes dorsalis.....	—	—	—	17	17	—	14	14	—	1	1	—	10	10	—
Tic.....	—	—	—	10	10	—	9	9	—	4	4	—	3	3	—
Tremor.....	—	—	—	8	8	—	14	13	1	9	9	—	3	3	—
Other forms.....	—	—	—	46	45	1	35	34	1	20	20	—	11	11	—
Epilepsy.....	2	2	—	273	265	8	132	128	4	84	83	1	80	73	7
Constitutional psychopathic states.....	6	6	—	319	315	4	234	233	1	105	102	3	104	97	7
Endocrinopathies.....	9	9	—	360	359	1	152	152	—	96	96	—	129	118	11
Drug addiction.....	3	3	—	70	67	3	23	22	1	34	30	4	46	38	8
Alcoholism.....	1	1	—	195	194	1	46	46	—	30	30	—	15	15	—
Total.....	79	79	—	3,324	3,274	50	1,779	1,753	26	1,132	1,121	11	1,000	944	56

TABLE 30.—*State of birth of neuropsychiatric cases—Continued*

Diagnoses	Kentucky			Louisiana			Maine			Maryland			Massachusetts		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	999	856	83	618	280	338	174	174	---	655	374	281	232	229	3
Psychoneuroses.....	343	300	43	331	268	63	48	48	---	125	100	25	192	189	3
Psychoses.....	163	151	12	133	89	44	25	25	---	101	84	17	172	171	1
General paralysis.....	12	12	---	7	4	3	1	1	---	6	3	3	7	7	---
Alcoholic.....	8	8	---	1	1	---	---	---	---	8	8	---	9	9	---
Manic-depressive.....	37	34	3	26	18	8	5	5	---	7	5	2	30	30	---
Dementia præcox.....	74	72	2	74	49	25	18	18	---	63	54	9	113	112	1
Epileptic.....	2	2	---	4	3	1	---	---	---	2	2	---	---	---	---
Other forms.....	30	23	7	21	14	7	1	1	---	15	12	3	13	13	---
Nervous diseases and injuries.....	295	258	37	112	62	50	22	21	1	78	55	23	83	82	1
Chorea.....	7	7	---	---	---	---	2	2	---	1	1	---	6	6	---
Hemiplegia.....	4	4	---	5	3	2	---	---	---	5	4	1	3	3	---
Injuries to nervous system.....	23	18	5	10	4	6	2	2	---	4	2	2	3	3	---
Meningitis.....	4	3	1	8	7	1	---	---	---	2	2	---	---	---	---
Multiple sclerosis.....	18	18	---	3	2	1	2	1	1	10	8	2	6	6	---
Neuritis.....	5	5	---	5	4	1	---	---	---	3	3	---	4	4	---
Paralysis.....	10	4	6	7	5	2	4	4	---	1	1	---	7	7	---
Poliomyelitis.....	2	2	---	2	2	---	---	---	---	4	4	---	1	1	---
Sciatica.....	6	6	---	---	---	---	1	1	---	2	2	---	3	3	---
Syphilis C. N. S.....	127	113	14	51	23	28	8	8	---	27	15	12	24	23	1
Tabes dorsalis.....	13	12	1	4	2	2	1	1	---	5	4	1	2	2	---
Tic.....	10	8	2	1	1	---	---	---	---	1	1	---	5	5	---
Tremor.....	37	30	7	4	3	1	---	---	---	3	2	1	3	3	---
Other forms.....	29	28	1	12	6	6	2	2	---	10	7	3	16	16	---
Epilepsy.....	202	184	18	279	113	166	36	36	---	48	32	16	116	115	1
Constitutional psychopathic states.....	193	188	5	96	76	20	31	31	---	98	86	12	157	156	1
Endocrinopathies.....	113	104	9	44	19	25	2	2	---	41	35	6	25	25	---
Drug addiction.....	38	31	7	26	22	4	5	5	---	15	11	4	49	45	4
Alcoholism.....	63	55	8	9	9	---	8	8	---	17	17	---	94	94	---
Total.....	2,349	2,127	222	1,648	938	710	351	350	1	1,178	794	384	1,120	1,106	14

Diagnoses	Michigan			Minnesota			Mississippi			Missouri			Montana		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	427	423	4	231	231	---	709	318	391	977	922	55	11	11	---
Psychoneuroses.....	202	201	1	182	182	---	324	207	117	446	424	22	12	12	---
Psychoses.....	203	202	1	142	142	---	128	74	54	276	267	9	11	11	---
General paralysis.....	21	21	---	3	3	---	8	5	3	29	29	---	1	1	---
Alcoholic.....	7	7	---	5	5	---	1	1	---	4	4	---	---	---	---
Manic-depressive.....	33	33	---	16	16	---	23	13	10	46	46	---	3	3	---
Dementia præcox.....	131	131	---	106	106	---	69	43	26	178	170	8	6	6	---
Epileptic.....	1	1	---	1	1	---	4	1	3	1	1	---	---	---	---
Other forms.....	10	9	1	11	11	---	23	11	12	18	17	1	1	1	---
Nervous diseases and injuries.....	175	175	---	96	95	1	165	95	70	322	298	24	12	12	---
Chorea.....	7	7	---	6	6	---	10	6	4	14	14	---	---	---	---
Hemiplegia.....	2	2	---	3	3	---	7	4	3	10	10	---	---	---	---
Injuries to nervous system.....	7	7	---	6	5	1	12	4	8	20	18	2	---	---	---
Meningitis.....	2	2	---	3	3	---	15	14	1	17	16	1	---	---	---
Multiple sclerosis.....	30	30	---	11	11	---	8	6	2	16	13	3	---	---	---
Neuritis.....	8	8	---	9	9	---	1	1	---	5	5	---	1	1	---
Paralysis.....	9	9	---	3	3	---	13	5	8	13	12	1	3	3	---
Poliomyelitis.....	3	3	---	3	3	---	3	1	2	6	5	1	---	---	---
Sciatica.....	---	---	---	1	1	---	2	2	---	3	3	---	---	---	---
Syphilis C. N. S.....	67	67	---	35	35	---	65	36	29	147	133	14	4	4	---
Tabes dorsalis.....	12	12	---	1	1	---	4	2	2	16	16	---	1	1	---
Tic.....	6	6	---	2	2	---	4	2	2	12	12	---	---	---	---
Tremor.....	3	3	---	---	---	---	4	2	2	15	14	1	1	1	---
Other forms.....	19	19	---	13	13	---	17	10	7	28	27	1	2	2	---
Epilepsy.....	132	131	1	79	77	2	238	104	134	194	177	17	9	9	---
Constitutional psychopathic states.....	188	187	1	69	69	---	80	59	21	273	264	9	6	6	---
Endocrinopathies.....	191	189	2	125	125	---	63	21	42	249	220	29	5	5	---
Drug addiction.....	27	27	---	30	30	---	28	26	2	106	79	27	2	2	---
Alcoholism.....	38	38	---	30	30	---	9	8	1	81	75	6	1	1	---
Total.....	1,583	1,573	10	984	981	3	1,744	912	832	2,924	2,726	198	69	69	---

TABLE 30.—State of birth of neuropsychiatric cases—Continued

Diagnoses	Nebraska			Nevada			New Hamp- shire			New Jersey			New Mexico		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	124	124	---	7	7	---	36	36	---	286	279	7	207	207	---
Psychoneuroses.....	94	94	---	6	6	---	19	19	---	163	163	---	24	24	---
Psychoses.....	84	84	---	2	2	---	18	18	---	128	125	3	17	17	---
General paralysis.....	10	10	---	---	---	---	2	2	---	5	5	---	---	---	---
Alcoholic.....	16	16	---	1	1	---	3	3	---	2	2	---	2	2	---
Manic-depressive.....	52	52	---	1	1	---	12	12	---	27	26	1	4	4	---
Dementia præcox.....	1	1	---	---	---	---	7	7	---	77	75	2	9	9	---
Epileptic.....	5	5	---	---	---	---	1	1	---	5	5	---	---	---	---
Other forms.....	---	---	---	---	---	---	12	12	---	12	12	---	2	2	---
Nervous diseases and injuries.....	65	65	---	3	3	---	13	13	---	61	59	2	20	20	---
Chorea.....	3	3	---	---	---	---	1	1	---	5	5	---	2	2	---
Hemiplegia.....	6	6	---	---	---	---	---	---	---	---	---	---	---	---	---
Injuries to nervous system.....	5	5	---	2	2	---	---	---	---	4	4	---	4	4	---
Meningitis.....	7	7	---	---	---	---	1	1	---	4	4	---	---	---	---
Multiple sclerosis.....	2	2	---	---	---	---	---	---	---	6	6	---	1	1	---
Neuritis.....	3	3	---	---	---	---	---	---	---	3	3	---	3	3	---
Paralysis.....	6	6	---	---	---	---	1	1	---	2	2	---	1	1	---
Poliomyelitis.....	1	1	---	---	---	---	---	---	---	1	1	---	---	---	---
Sciatica.....	---	---	---	---	---	---	---	---	---	1	1	---	1	1	---
Syphilis C. N. S.....	22	22	---	---	---	---	3	3	---	14	13	1	4	4	---
Tabes dorsalis.....	---	---	---	1	1	---	---	---	---	3	3	---	---	---	---
Tic.....	3	3	---	---	---	---	3	3	---	2	2	---	---	---	---
Tremor.....	1	1	---	---	---	---	1	1	---	6	6	---	---	---	---
Other forms.....	6	6	---	---	---	---	3	3	---	10	9	1	4	4	---
Epilepsy.....	45	44	1	---	---	---	18	18	---	114	108	6	29	29	---
Constitutional psychopathic states.....	40	40	---	3	3	---	17	17	---	123	122	1	11	10	1
Endocrinopathies.....	55	55	---	1	1	---	2	2	---	63	62	1	13	13	---
Drug addiction.....	19	18	1	---	---	---	2	2	---	41	36	5	4	4	---
Alcoholism.....	14	14	---	3	3	---	7	7	---	35	35	---	2	2	---
Total.....	540	538	2	25	25	---	133	133	---	1,014	989	25	327	326	1

Diagnoses	New York			North Carolina			North Dakota			Ohio			Oklahoma		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	826	814	12	828	641	187	49	49	---	795	778	17	241	189	52
Psychoneuroses.....	807	802	5	361	256	105	20	19	1	633	616	17	69	64	5
Psychoses.....	563	560	3	163	134	29	26	26	---	363	360	3	71	69	2
General paralysis.....	43	41	2	---	5	3	---	---	---	28	27	1	2	2	---
Alcoholic.....	35	35	---	3	1	2	---	---	---	15	15	---	1	1	---
Manic-depressive.....	119	118	1	19	13	6	3	3	---	92	92	---	11	10	1
Dementia præcox.....	322	322	---	111	96	15	22	22	---	186	185	1	50	49	1
Epileptic.....	5	5	---	5	5	---	1	1	---	2	2	---	---	---	---
Other forms.....	39	39	---	17	14	3	---	---	---	40	39	1	7	7	---
Nervous diseases and injuries.....	375	374	1	126	85	41	13	13	---	368	362	6	57	51	6
Chorea.....	17	17	---	1	1	---	1	1	---	18	18	---	1	1	---
Hemiplegia.....	11	11	---	5	3	2	---	---	---	10	10	---	3	3	---
Injuries to nervous system.....	37	37	---	11	7	4	3	3	---	18	18	---	3	---	3
Meningitis.....	10	10	---	2	1	1	---	---	---	4	4	---	6	6	---
Multiple sclerosis.....	20	20	---	10	8	2	1	1	---	23	23	---	3	3	---
Neuritis.....	4	4	---	3	3	---	2	2	---	8	8	---	1	1	---
Paralysis.....	24	24	---	10	5	5	1	1	---	11	11	---	4	3	1
Poliomyelitis.....	31	31	---	3	3	---	2	2	---	6	6	---	2	2	---
Sciatica.....	11	11	---	2	2	---	---	---	---	3	2	1	5	5	---
Syphilis C. N. S.....	114	113	1	41	26	15	1	1	---	151	147	4	21	20	1
Tabes dorsalis.....	9	9	---	6	2	4	---	---	---	20	20	---	1	---	1
Tic.....	19	19	---	4	2	2	---	---	---	10	10	---	2	2	---
Tremor.....	10	10	---	5	4	1	---	---	---	25	25	---	1	1	---
Other forms.....	58	58	---	23	20	3	2	2	---	61	60	1	4	4	---
Epilepsy.....	383	375	8	213	140	73	15	14	1	239	229	10	47	42	5
Constitutional psychopathic states.....	631	627	4	68	58	10	24	24	---	283	279	4	40	39	1
Endocrinopathies.....	272	272	---	114	95	19	4	4	---	430	427	3	26	21	5
Drug addiction.....	427	416	11	22	11	11	5	5	---	92	86	6	42	34	8
Alcoholism.....	184	184	---	15	14	1	2	2	---	79	78	1	10	10	---
Total.....	4,468	4,424	44	1,910	1,434	476	158	156	2	3,282	3,215	67	603	519	84

TABLE 30.—*State of birth of neuropsychiatric cases—Continued*

Diagnoses	Oregon			Pennsylvania			Rhode Island			South Carolina		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	60	39	21	1,080	1,056	24	41	38	3	563	304	259
Psychoneuroses.....	33	32	1	645	632	13	31	31	—	305	154	151
Psychoses.....	21	21	—	510	505	5	20	19	1	104	56	48
General paralysis.....	—	—	—	44	44	—	3	3	—	3	3	—
Alcoholic.....	1	1	—	37	37	—	—	—	—	2	2	—
Manic-depressive.....	3	3	—	73	73	—	2	1	1	20	10	10
Dementia præcox.....	14	14	—	294	290	4	13	13	—	66	34	32
Epileptic.....	—	—	—	5	4	1	—	—	—	2	2	—
Other forms.....	3	3	—	57	57	—	2	2	—	11	5	6
Nervous diseases and injuries.....	19	19	—	448	438	10	10	9	1	112	57	55
Chorea.....	3	3	—	24	24	—	1	1	—	—	—	—
Hemiplegia.....	—	—	—	10	10	—	—	—	—	13	6	7
Injuries to nervous system.....	—	—	—	26	25	1	2	2	—	16	12	4
Meningitis.....	1	1	—	24	24	—	1	1	—	3	2	1
Multiple sclerosis.....	—	—	—	51	48	3	—	—	—	5	1	4
Neuritis.....	1	1	—	17	17	—	—	—	—	6	5	1
Paralysis.....	2	2	—	22	22	—	1	1	—	9	6	3
Poliomyelitis.....	—	—	—	7	7	—	—	—	—	1	1	—
Sciatica.....	—	—	—	4	4	—	—	—	—	1	1	—
Syphilis C. N. S.....	5	5	—	152	147	5	3	3	—	32	12	20
Tabes dorsalis.....	2	2	—	33	32	1	—	—	—	5	1	4
Tic.....	1	1	—	16	16	—	—	—	—	—	—	—
Tremor.....	—	—	—	5	5	—	1	—	1	5	—	5
Other forms.....	4	4	—	57	57	—	1	1	—	16	10	6
Epilepsy.....	15	14	1	337	325	12	14	13	1	170	65	105
Constitutional psychopathic states.....	38	38	—	523	513	10	12	12	—	50	42	8
Endocrinopathies.....	15	15	—	437	433	4	7	7	—	60	44	16
Drug addiction.....	6	6	—	166	154	12	9	8	1	13	8	5
Alcoholism.....	3	3	—	259	259	—	11	11	—	6	6	—
Total.....	210	187	23	4,405	4,315	90	155	148	7	1,383	736	647

Diagnoses	South Dakota			Tennessee			Texas			Utah		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	95	94	1	1,071	623	448	534	421	113	36	36	—
Psychoneuroses.....	41	41	—	262	215	47	300	246	54	25	24	1
Psychoses.....	23	22	1	170	139	31	299	258	41	23	23	—
General paralysis.....	—	—	—	7	5	2	7	5	2	—	—	—
Alcoholic.....	—	—	—	1	—	1	8	8	—	—	—	—
Manic-depressive.....	2	2	—	28	25	3	42	34	8	4	4	—
Dementia præcox.....	17	17	—	108	88	20	190	168	22	16	16	—
Epileptic.....	—	—	—	2	2	—	1	1	—	—	—	—
Other forms.....	4	3	1	24	19	5	51	42	9	3	3	—
Nervous diseases and injuries.....	24	24	—	225	175	50	256	206	50	9	9	—
Chorea.....	—	—	—	5	4	1	15	15	—	—	—	—
Hemiplegia.....	1	1	—	12	11	1	25	18	7	—	—	—
Injuries to nervous system.....	3	3	—	17	10	7	22	16	6	—	—	—
Meningitis.....	5	5	—	5	2	3	7	5	2	—	—	—
Multiple sclerosis.....	4	4	—	20	19	1	9	8	1	1	1	—
Neuritis.....	1	1	—	5	5	—	8	6	2	—	—	—
Paralysis.....	1	1	—	10	8	2	9	4	5	—	—	—
Poliomyelitis.....	—	—	—	9	9	—	4	4	—	1	1	—
Sciatica.....	—	—	—	4	3	1	14	11	3	1	1	—
Syphilis C. N. S.....	5	5	—	92	65	27	76	62	14	1	1	—
Tabes dorsalis.....	—	—	—	10	9	1	5	3	2	—	—	—
Tic.....	—	—	—	3	2	1	9	6	3	—	—	—
Tremor.....	1	1	—	5	5	—	14	14	—	1	1	—
Other forms.....	3	3	—	28	23	5	39	34	5	4	4	—
Epilepsy.....	18	18	—	174	119	55	294	212	82	10	10	—
Constitutional psychopathic states.....	15	15	—	81	73	8	136	129	7	15	15	—
Endocrinopathies.....	38	38	—	105	74	31	56	48	8	7	7	—
Drug addiction.....	2	2	—	51	44	7	93	80	13	11	10	1
Alcoholism.....	2	2	—	15	14	1	21	20	1	4	4	—
Total.....	258	256	2	2,154	1,476	678	1,989	1,620	369	140	138	2

TABLE 30.—State of birth of neuropsychiatric cases—Continued

Diagnoses	Vermont			Virginia			Washington			West Virginia		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	37	36	1	855	575	280	42	42	—	385	370	15
Psychoneuroses.....	26	26	—	255	175	80	25	25	—	137	132	5
Psychoses.....	15	15	—	191	140	51	28	28	—	97	89	8
General paralysis.....	3	3	—	11	7	4	1	1	—	3	3	—
Alcoholic.....	—	—	—	3	2	1	1	1	—	3	3	—
Manic-depressive.....	4	4	—	33	26	7	2	2	—	17	16	1
Dementia præcox.....	6	6	—	116	89	27	18	18	—	66	60	6
Epileptic.....	—	—	—	1	1	1	1	1	—	2	2	—
Other forms.....	2	2	—	27	16	11	5	5	—	6	5	1
Nervous diseases and injuries.....	12	12	—	145	102	43	11	11	—	98	93	5
Chorea.....	3	3	—	5	4	1	1	1	—	1	1	—
Hemiplegia.....	—	—	—	9	4	5	—	—	—	3	3	—
Injuries to nervous system.....	—	—	—	16	8	8	—	—	—	13	13	—
Meningitis.....	—	—	—	10	10	—	1	1	—	5	4	1
Multiple sclerosis.....	1	1	—	11	11	—	1	1	—	3	3	—
Neuritis.....	—	—	—	4	4	—	1	1	—	3	3	—
Paralysis.....	3	3	—	6	4	2	1	1	—	3	2	1
Poliomyelitis.....	—	—	—	3	2	1	—	—	—	4	4	—
Sciatica.....	—	—	—	3	2	1	1	1	—	1	1	—
Syphilis C. N. S.....	3	3	—	48	29	19	4	4	—	35	34	1
Tabes dorsalis.....	—	—	—	3	2	1	—	—	—	7	6	1
Tic.....	1	1	—	8	7	1	1	1	—	3	3	—
Tremor.....	—	—	—	5	4	1	—	—	—	3	3	—
Other forms.....	1	1	—	14	11	3	1	1	—	9	8	1
Epilepsy.....	7	7	—	150	82	68	11	11	—	70	69	1
Constitutional psychopathic states.....	11	11	—	115	102	13	19	19	—	82	81	1
Endocrinopathies.....	3	3	—	134	115	19	17	17	—	148	147	1
Drug addiction.....	—	—	—	32	18	14	12	10	2	12	11	1
Alcoholism.....	4	4	—	20	17	3	5	5	—	7	7	—
Total.....	115	114	1	1,897	1,326	571	170	168	2	1,036	999	37

Diagnoses	Wisconsin			Wyoming			District of Columbia			Unascertained		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Mental deficiency.....	317	317	—	8	8	—	48	13	35	1,537	1,266	271
Psychoneuroses.....	250	249	1	6	6	—	25	21	4	646	575	71
Psychoses.....	167	167	—	2	2	—	19	14	5	534	504	30
General paralysis.....	12	12	—	—	—	—	—	—	—	48	43	5
Alcoholic.....	8	8	—	—	—	—	1	1	—	23	23	—
Manic-depressive.....	37	37	—	2	2	—	2	2	—	95	91	4
Dementia præcox.....	89	89	—	—	—	—	13	9	4	273	260	13
Epileptic.....	5	5	—	—	—	—	—	—	—	31	24	7
Other forms.....	16	16	—	—	—	—	3	2	1	64	63	1
Nervous diseases and injuries.....	151	151	—	6	6	—	21	15	6	504	441	63
Chorea.....	7	7	—	—	—	—	1	1	—	12	12	—
Hemiplegia.....	7	7	—	—	—	—	—	—	—	14	14	—
Injuries to nervous system.....	6	6	—	1	1	—	1	1	—	37	34	3
Meningitis.....	—	—	—	—	—	—	2	2	—	58	54	4
Multiple sclerosis.....	22	22	—	—	—	—	1	1	—	27	26	1
Neuritis.....	6	6	—	1	1	—	—	—	—	17	16	1
Paralysis.....	7	7	—	—	—	—	1	—	1	25	20	5
Poliomyelitis.....	4	4	—	—	—	—	1	1	—	12	11	1
Sciatica.....	—	—	—	—	—	—	1	1	—	6	6	—
Syphilis C. N. S.....	54	54	—	3	3	—	8	5	3	140	121	19
Tabes dorsalis.....	11	11	—	1	1	—	3	2	1	41	37	4
Tic.....	4	4	—	—	—	—	—	—	—	18	17	1
Tremor.....	6	6	—	—	—	—	—	—	—	9	8	1
Other forms.....	17	17	—	—	—	—	2	1	1	88	85	3
Epilepsy.....	86	85	1	2	2	—	14	8	6	498	447	51
Constitutional psychopathic states.....	91	91	—	3	3	—	13	10	3	424	398	26
Endocrinopathies.....	155	155	—	4	4	—	7	5	2	368	348	20
Drug addiction.....	7	7	—	3	3	—	9	8	1	133	127	6
Alcoholism.....	43	43	—	1	1	—	2	2	—	130	130	—
Total.....	1,267	1,265	2	35	35	—	158	96	62	4,774	4,236	538

TABLE 31.—Gain or loss of neuropsychiatric cases resulting from immigration or migration ^a

	Total gain or loss	State migration		Foreign immigration		Total gain or loss	State migration		Foreign immigration
		White	Colored				White	Colored	
Alabama.....	-211	-98	-120	+7	Nevada.....	+48	+35	+1	+12
Arizona.....	+98	+76	+6	+16	New Hampshire.....	+37	+4	.....	+33
Arkansas.....	+2	-55	+53	+4	New Jersey.....	+782	+437	+37	+308
California.....	+1,223	+924	-26	+325	New Mexico.....	+30	+17	+4	+9
Colorado.....	+252	+198	-2	+56	New York.....	+3,799	+1,980	+117	+1,672
Connecticut.....	+438	+244	+4	+190	North Carolina.....	-133	-39	-99	+5
Delaware.....	+32	+7	+12	+13	North Dakota.....	+157	+106	-2	+63
Florida.....	+118	+87	+12	+19	Ohio.....	+1,079	+555	+103	+421
Georgia.....	-38	+42	-96	+16	Oklahoma.....	+778	+677	+80	+21
Idaho.....	+101	+86	+2	+13	Oregon.....	+130	+117	-19	+32
Illinois.....	+1,417	+693	+96	+628	Pennsylvania.....	+2,514	+1,321	+148	+1,045
Indiana.....	+437	+38	+17	+82	Rhode Island.....	+154	+75	+3	+76
Iowa.....	-114	-177	+13	+50	South Carolina.....	-100	-3	-99	+2
Kansas.....	-7	-32	-5	+30	South Dakota.....	+75	+49	-2	+28
Kentucky.....	-288	-251	-48	+11	Tennessee.....	-126	-151	+20	+5
Louisiana.....	+10	+19	-23	-14	Texas.....	+22	+2	-28	+48
Maine.....	+101	+42	.....	+59	Utah.....	+28	+13	-1	+16
Maryland.....	+181	+87	+45	+49	Vermont.....	+11	-1	.....	+12
Massachusetts.....	+896	+448	+7	+441	Virginia.....	+138	+117	+5	+16
Michigan.....	+1,033	+558	+36	+439	Washington.....	+354	+273	.....	+81
Minnesota.....	+381	+201	+8	+172	West Virginia.....	+298	+215	+43	+40
Mississippi.....	-131	-42	-96	+7	Wisconsin.....	+233	+80	+2	+151
Missouri.....	+171	-1	+81	+89	Wyoming.....	+102	+80	+2	+20
Montana.....	+259	+200	+4	+53	District of Columbia.....	+111	+65	+29	+17
Nebraska.....	+16	-40	+9	+47					

^a Data unascertained for 2,755 cases.

RACE

Table 32 shows the distribution of neuropsychiatric conditions among the races concerned. From it may be seen the distribution averages attained by the several races. Table 33 furnishes information in regard to the four foreign-born peoples of which the numbers were adequate. This table offers opportunity for comparing the occurrence of neuropsychiatric conditions between the native and foreign born in the four peoples.

The results as to the different races classified worthy of notice are summarized below.

AFRICAN (NEGRO)

(Number classified, 8,401)

A high distribution rate of mental defect and a low distribution rate of alcoholism is found in this race. The low alcoholic distribution exists in spite of the fact that the alcoholic habits of Negroes are about the same as of whites. From this comparison it appears that the Negro can be practically as intemperate as the white man without paying the same penalty for it. On the other hand, he has a higher ratio of venereal disease. (See Table 25.) By reason of this, it would seem that some modification might be made in the views of those who place alcohol as the chief factor in the spread of venereal diseases. A similar, though less marked, resistance to the invasion of the central nervous system by syphilis is shown by the Negro. Among neuropsychiatric patients the previous history of syphilis was more than three times as frequent in the colored as in the whites, but the invasion of the central nervous system was about equal in the two classes.

TABLE 32.—*Races of neuropsychiatric cases*

Diagnoses	Total	African (Negro)	American Indian	Armenian	Dutch	English	French	German	Greek	Hebrew	Irish	Italian
Mental deficiency	21,858	4,055	78	26	86	2,651	274	1,217	67	226	936	803
Psychoneuroses	11,443	1,100	6	11	49	1,501	174	761	70	331	662	443
Psychoses	7,910	556	5	10	43	1,070	95	552	39	196	524	237
General paralysis	530	43			3	74	4	36	3	6	56	12
Alcoholic	292	5			3	23		27	3	1	46	4
Manic-depressive	1,385	81			5	165	18	115	11	41	70	57
Dementia præcox	4,738	305	5	8	22	705	59	332	20	128	288	133
Epileptic	131	19				8	3	3		6	6	7
Other forms	834	103		2	10	95	11	39	2	14	58	24
Nervous diseases and injuries	6,916	800	5	8	38	913	102	418	25	98	516	191
Chorea	264	12	1		3	43	6	14		2	27	3
Hemiplegia	258	48		1	2	23	8	10	3	5	13	3
Injuries to nervous system	554	126	1		3	61	6	40	3	10	31	15
Meningitis	279	37			1	40	6	18	4	2	23	7
Multiple sclerosis	511	28			4	74	11	35		6	41	10
Neuritis	222	9		2	3	40	5	16		2	14	13
Paralysis	340	58			2	45	5	19		9	13	10
Poliomyelitis	211	20		1	1	22	2	15	1	4	10	11
Sciatica	137	10				14	2	10		6	17	
Syphilis C. N. S.	2,462	301	2	2	12	316	28	125	14	30	232	68
Tabes dorsalis	333	39			3	37	4	16		4	28	8
Tic	200	17				37	6	27		3	9	4
Tremor	243	31				33	3	17			18	4
Other forms	902	64	1	2	4	128	10	56		15	60	24
Epilepsy	6,388	1,115	9	7	34	813	102	321	38	93	366	315
Constitutional psychopathic states	6,196	255	11	6	33	975	75	433	23	203	497	228
Endocrinopathies	4,805	299	3	1	34	796	55	474	15	73	287	94
Drug addiction	2,020	197	4		5	171	25	70	1	88	222	131
Alcoholism	1,858	24	3		6	202	39	105	3	6	452	10
Total	69,394	8,401	124	69	328	9,092	941	4,351	281	1,314	4,462	2,452

Diagnoses	Japanese	Mexican	Filipino	Porto Rican	Scandinavian	Scotch	Slavonian	Spanish	Welsh	Other peoples	Mixed	Race unascertained
Mental deficiency		257	3	1	296	72	915	31	13	237	6,490	3,124
Psychoneuroses	1	16		2	221	106	378	19	16	123	4,333	1,120
Psychoses	1	18	1	2	217	71	358	11	9	84	2,889	922
General paralysis		1			10	17	17		1	5	164	78
Alcoholic					5	1	14			2	120	38
Manic-depressive		6			31	11	63		2	13	535	161
Dementia præcox	1	10		2	152	36	231	9	5	60	1,700	527
Epileptic					2	2	2				58	17
Other forms		1	1		19	4	31	2	1	4	312	101
Nervous diseases and injuries		22		3	127	96	181	16	16	62	2,406	873
Chorea		1			6	2	1				111	32
Hemiplegia		2			4	3	9		1	1	95	25
Injuries to nervous system		2			10	9	15	3	3	3	170	43
Meningitis		2			4	3	1	1		1	96	33
Multiple sclerosis		1			16	8	18	1	2	3	198	55
Neuritis		3			8	5	8				78	16
Paralysis		1			5	2	8			3	131	28
Poliomyelitis					4	3	4	2			91	17
Sciatica		1			1	3	6	2		1	47	6
Syphilis C. N. S.		4		1	44	38	68	5	5	31	802	354
Tabes dorsalis				1	5	3	7		1	2	112	63
Tic					2	2	3		1	4	67	18
Tremor		1			3	2	5			2	76	48
Other forms		4		1	15	13	28	1	3	8	332	133
Epilepsy		45	2		85	54	163	13	5	61	2,046	701
Constitutional psychopathic states		15			105	62	247	12	11	73	2,347	585
Endocrinopathies		9			132	60	141	1	6	33	1,691	601
Drug addiction		2			24	27	29	4	1	10	870	139
Alcoholism			1	1	49	31	62	2	8	12	532	310
Total	2	384	7	9	1,256	579	2,474	109	85	695	23,604	8,375

TABLE 33.—*Per cent distribution of neuropsychiatric conditions among four different races, with comparisons between the American born and the foreign born*

Race	Number classified	Per cent of total of each nativity								
		Mental deficiency	Psychoneuroses	Psychoses	Neurological condition	Epilepsy	Constitutional psychopathic states	Endocrinopathies	Drug addiction	Alcoholism
Italians:										
American born	413	33.9	13.6	11.6	6.5	2.2	10.9	1.0	19.1	1.2
Foreign born	2,039	32.5	19.0	9.3	8.0	15.0	9.0	4.4	2.6	.2
Scandinavians:										
American born	890	26.7	17.8	15.4	9.1	6.6	8.3	11.0	2.1	2.8
Foreign born	366	15.8	16.9	21.9	12.6	7.1	8.5	9.3	1.4	6.6
Irish:										
American born	4,068	21.6	14.7	10.9	11.6	8.2	11.6	6.6	5.4	9.4
Foreign born	394	15.0	15.7	20.1	10.9	7.9	6.6	4.8	1.0	18.0
German:										
American born	4,164	28.1	17.6	12.3	9.6	7.3	10.1	11.0	1.6	2.4
Foreign born	187	25.7	15.5	21.4	10.7	8.6	7.0	7.5	1.6	2.1

TABLE 34.—*Races of neuropsychiatric cases. Classification percentage*

Race	Total classified		Per cent of total of each race								
	Number	Per cent	Mental deficiency	Psychoneuroses	Psychoses	Neurological	Epilepsy	Constitutional psychopathic states	Endocrinopathies	Drug addiction	Alcoholism
African (Negro)	8,401	12.1	48.3	13.1	6.6	9.5	13.3	3.0	3.6	2.3	0.3
American Indian	124	.2	62.9	4.8	4.0	4.0	7.3	8.9	2.4	3.2	2.4
Armenian	69	.1	37.7	15.9	14.5	11.6	10.1	8.7	1.4		
Dutch	328	.5	26.2	14.9	13.1	11.6	10.4	10.1	10.4	1.5	1.8
English	9,092	13.1	29.2	16.5	11.8	10.0	8.9	10.7	8.8	1.9	2.2
French	941	1.4	29.1	18.5	10.1	10.8	10.8	8.0	5.8	2.7	4.1
German	4,351	6.3	28.0	17.5	12.7	9.6	7.4	10.0	10.9	1.6	2.4
Greek	281	.4	23.8	24.9	13.9	8.9	13.5	8.2	5.3	.4	1.1
Hebrew	1,314	1.9	17.2	25.2	14.9	7.5	7.1	15.4	5.6	6.7	.5
Irish	4,462	6.4	21.0	14.8	11.7	11.6	8.2	11.1	6.4	5.0	10.1
Italian	2,452	3.5	32.7	18.1	9.7	7.8	12.8	9.3	3.8	5.3	.4
Mexican	384	.6	66.9	4.2	4.7	5.7	11.7	3.9	2.3	.5	
Scandinavian	1,256	1.8	23.6	17.6	17.3	10.1	6.8	8.4	10.5	1.9	3.9
Scotch	579	.8	12.4	18.3	12.3	15.6	9.3	10.7	10.4	4.7	5.4
Slavonian	2,474	3.6	37.0	15.3	14.5	7.3	6.6	10.0	5.7	1.2	2.5
Spanish	109	.2	28.4	17.4	10.1	14.7	11.9	11.0	.9	3.7	1.8
Welsh	85	.1	15.3	18.8	10.6	18.8	5.9	12.9	7.1	1.2	9.4
Mixed	23,604	34.0	27.5	18.4	12.2	10.2	8.7	9.9	7.2	3.7	2.3
Other peoples	713	1.0	33.8	17.7	12.3	9.1	8.8	10.2	4.6	1.4	2.0
Race unascertained	8,375	12.1	37.3	13.4	11.0	10.4	8.4	7.0	7.2	1.7	3.7
Total cases	69,394	100.0	31.5	16.5	11.4	10.0	9.2	8.9	6.9	2.9	2.7

With the exception of mental deficiency and epilepsy, the Negro falls below all United States distribution averages. He is especially low in psychoses, constitutional psychopathic states, and alcoholism. In the psychoneuroses, the Negro presents distinct differences from the white man. He is more prone to hysteria than to neurasthenia, and stammering is nearly twice as frequent with him as is neurasthenia. The psychological mechanism of the disorder is simple, as these conditions in Negroes were identified more frequently by examining and discharging officers. In Negroes the psychoneuroses occurred more frequently in the younger age groups than in the whites. The Negro is given to early marriage, lives more in the country, and contends with especially unfavorable circumstances as concerns education and modern standards of living.

AMERICAN INDIAN

(Number classified, 124)

The American Indian is primitive, like the Negro, and exceeds even the latter in mental deficiency. He is not so much below the average in alcoholism or drug addiction as the Negro, but is somewhat below him in epilepsy. In other neuropsychiatric conditions the Indian falls below all United States averages.

As concerns non-native races, it should be remembered that the information which follows stands by itself, and is not supplemented by any facts as to the circumstances of residence of these races in this country, nor as to the causes of their immigration or nature of occupation. There is no information as to whether these individuals are representative of the same races living at home.

Comparison can be made also between the native born and the foreign born of the different races given in Table 33. Certain definite variations are noticeable; for example, practically all native born are more addicted to the use of drugs than are the foreign born. The influence of this country seems to arouse a drug inebriety or to convert an alcoholic inebriety into a drug inebriety. Similarly, foreigners seem to undergo a decrease in insanity from residence in this country.

TABLE 35.—*Foreign-born neuropsychiatric cases, by countries of birth*

Country of birth	Number classified	Per cent of total of each nativity								
		Mental defi- ciency	Psycho- neuroses	Psycho- ses	Neuro- logical	Epi- lepsy	Consti- tutional psycho- pathic states	Endo- erino- pathies	Drug addic- tion	Alco- holism
Austria-Hungary	462	31.8	14.9	19.0	5.6	11.0	8.7	6.5	1.1	1.3
Canada	337	21.4	16.6	13.4	12.8	9.2	10.1	4.5	3.0	9.2
Denmark, Norway, Swe- den	366	15.8	16.9	21.9	12.6	7.1	8.5	9.3	1.4	6.6
England, Scotland, Wales	323	9.3	24.5	12.1	12.4	8.4	15.2	5.0	3.1	10.2
France	49	20.4	16.3	10.2	24.5	14.3	8.2	2.0	2.0	2.0
Germany	187	25.7	15.5	21.4	10.7	8.6	7.0	7.5	1.6	2.1
Greece	242	24.0	23.1	15.3	9.1	14.5	7.4	6.2	.4	2.0
Holland	50	18.0	16.0	24.0	4.0	20.0	8.0	8.0	1.0	18.0
Ireland	394	15.0	15.7	20.1	10.9	7.9	6.6	4.8	2.6	.2
Italy	2,039	32.5	19.0	9.3	8.0	15.0	9.0	4.4	.3	.9
Poland	331	43.5	15.1	13.0	6.9	6.9	9.1	4.2	1.4	1.5
Russia	1,675	32.1	21.1	15.3	7.2	5.7	11.3	4.4	1.4	9.7
Switzerland	31	6.5	22.6	25.8	9.7	9.7	6.5	9.7	8	1.8
Others	772	28.9	17.5	17.2	9.5	9.6	11.1	3.6		

DUTCH

(Number classified, 328)

The Dutch come near the United States average in almost all groups. They drink more than they take drugs, but in both are below the United States averages. They have a few less neurotics and a few more of the other classified disorders, except mental deficiency, alcoholism, and drug addiction.

ENGLISH

(Number classified, 9,092)

The English, like the Dutch, approximate the United States average in practically all groups. They are more inclined to drink than to take drugs, and have a slight excess of epilepsy, endocrine disturbances, and constitutional psychopathic states. They just reach the United States average for mental defect.

FRENCH

(Number classified, 941)

The French show rather a high total of inebriety, being above the average in alcoholism, and only a little below it in drugs, their total inebriety percentage being 6.8 per cent as compared with 4.1 per cent for English, and 4 per cent for the Germans. They also exceed the average in psychoneuroses, neurological conditions, and epilepsy. They are considerably below the average in endocrine disorders and constitutional psychopathic states, and are about equal to the United States average for mental defect. The excess of inebriety in the French may surprise many, as the French are said to be a wine-drinking people, and it is a common belief that wine-drinking people do not suffer from alcoholism. As a matter of fact, alcoholism depends more upon the amount of absolute alcohol imbibed than upon the form in which it is taken. If enough wine or beer or any other beverage with comparatively low alcohol content is taken, a person becomes alcoholic.

AMERICAN-BORN GERMAN

(Number classified, 4,164)

In spite of his reputed beer-drinking customs, the native German fails to reach the United States average in alcoholism, and is not much given to drugs. On the other hand, he exceeds, slightly, the United States average in psychoses, psychoneuroses, and constitutional psychopathic states, and by 3.6 per cent in endocrine troubles. He is slightly below United States average in mental defect.

FOREIGN-BORN GERMAN

(Number classified, 187)

The foreign-born German shows a much higher rate for insanity than the native born, and one considerably lower in endocrine troubles and mental defect.

GREEK

(Number classified, 281)

The Greeks are very low in inebriety, especially as concerns drugs, but exceed the United States average in epilepsy, the psychoses, and the psychoneuroses, an excess particularly noticeable in epilepsy and the psychoneuroses. They are well below the average in mental defect and constitutional psychopathic states.

HEBREW

(Number classified, 1,314)

The American-born Hebrew shows a very striking contrast in his habits of inebriety as far as the choice of alcohol and drugs is concerned. The number of Hebrew alcoholics is almost negligible, while the percentage of drug addicts is more than double the United States rate. The Hebrew is also low in neurological conditions, epilepsy, endocrine disturbances, and mental deficiency. The low percentage of mental defect is particularly striking; the only classified races which show less being the Scotch. The Hebrew exceeds, on the other hand, the average representation in the conditions characterized by emotional instability. He is nearly 3 per cent above the United States average for insanity, and is very much above it in the psychoneuroses and the constitutional psychopathic states.

AMERICAN-BORN IRISH

(Number classified, 4,068)

The American-born Irish show the most pronounced tendency to inebriety of any racial group except the foreign-born Irish, and their intemperance relates to both alcohol and drugs. Inebriety constitutes 14.8 per cent of all their neuropsychiatric disorders. Although they are less than one-sixteenth of all the neuropsychiatric cases, the native-born Irish contribute more than one-fifth of all the cases of alcoholism identified by the neuropsychiatric examiners and more than one-tenth of all the cases of drug addiction. With the exception of inebriety, neurological conditions, and constitutional psychopathic states, they sink below all United States averages. They are so far below this average in mental defect that they confirm the general law of the incompatibility of alcoholism and mental defect. They also furnish an interesting example of a high distribution of alcoholism with an underaverage of mental disease. It would seem that if alcoholism were an important cause of insanity, one would find an excess of it, instead of an underaverage in a group so given to alcoholic intemperance as this one is. But in this connection it should be remembered that drafted men, as a class, were too young to have developed alcoholic insanity.

The Irish offer an interesting comparison with the English. They have more inebriety by 11 per cent and less mental defect by 8.2 per cent. The excess of alcoholism and the lesser amount of mental defect would show them to be a livelier, more excitable race than the English, which is rather borne out by their having a slight excess of constitutional psychopaths than the English.

FOREIGN-BORN IRISH

(Number classified, 394)

The foreign-born Irish have a distribution rate of mental defect 6.6 per cent lower than that for the native. They have also a lower distribution rate of constitutional psychopathic states and endocrine troubles. Insanity and inebriety are much higher among them than among those born in this country. Inebriety changes both in extent and in its own distribution. There is a lessened total rate of inebriety by 4.2 per cent among the native, and even a greater falling off in the distribution rate of alcoholism. Nearly one-half of the decrease

in alcoholism is accounted for by an increase in drug addiction among the native born. It would seem at first sight that the lowering of the distribution rate for insanity among the native-born Irish was to be connected with the lowering of the alcohol rate, but it should be observed that a similar decrease in insanity distribution occurs in the German native born as compared with foreign born, with an increase in alcoholism, and a smaller decrease in insanity among Scandinavian native born, with a large decrease in the alcohol rate.

AMERICAN-BORN ITALIANS

(Number classified, 413)

The native Italians present a distribution of neuropsychiatric disorders which indicates a sluggish, backward mentality. As drug addicts they have a much larger percentage than the Jews, and like the Jews are little given to alcoholic inebriety. Some races, such as the Jews and the Irish, seem to be able to surpass the average in drug inebriety, and still, through the low percentage of other disorders which indicate racial backwardness, retain the characteristics of nimble-minded people. For example, the Irish, while they are excessive drug users, are more given to intemperance in alcohol than in drugs; and of the two, alcoholic intemperance seems to indicate a more active mentality than does the secret and solitary use of drugs. Both Irish and Jews, while exceeding the average for drugs, are far below it in mental defect. But the Italians make the poorer choice for the satisfaction of their inebriate tendencies; and in addition to that show their racial backwardness by a preponderance of those other disorders which must be accepted as indicative of inferiority. In mental defect the native Italians exceed the United States average rate by 4.7 per cent, but in epilepsy they fall below the United States average by 6.4 per cent. In respect to the distribution of neuropsychiatric defects in general, they manifest a remarkable correlation with the two primitive races, the Negro and the American Indians. All three have an excess of mental deficiency and are below the average in mental diseases. All these are low in endocrine troubles, and take drugs more than they drink.

FOREIGN-BORN ITALIANS

(Number classified, 2,039)

The foreign-born Italian shows considerable variation from the native in the distribution of neuropsychiatric disorders. The rate for epilepsy and psychoneuroses is much higher among the foreign born, but the rate for drug addiction is higher among the native, as in fact it is among all the native-born European races except the Germans, where the two percentages are equal.

MEXICANS

(Number classified, 384)

Of all the races classified the Mexicans have the highest rate for mental defect, 66.9 per cent. They exceed even the Negroes and American Indians. As all percentages are based on the total neuropsychiatric cases from each race, it is evident that when two-thirds of the total is taken up by a single condition the percentages of the other eight conditions must be low. So it is with the

Mexicans. With the single exception of epilepsy, they are below the United States average in all other neuropsychiatric groups. There was not a single alcoholic among them, and only two drug addicts, as contrasted with 45 epileptics and 257 mental defectives.

MIXED RACES

(Number classified, 23,604)

The mixed races include those whose ancestors were of different races. This group, of course, includes most "Americans." The large number (almost one-third of the total cases) makes this group fundamentally important in the establishment of the United States average.

AMERICAN-BORN SCANDINAVIANS

(Number classified, 890)

Native Scandinavians (Norwegian, Danish, Swedish, Icelandic) show an excess of mental disturbances and endocrine troubles. They slightly exceed the United States average of psychoneuroses. They are well below the average in mental defect and in epilepsy.

FOREIGN-BORN SCANDINAVIANS

(Number classified, 366)

The foreign-born Scandinavians show much less mental deficiency than those born here, and, strangely enough, less endocrinopathy. On the other hand, they show an excessive percentage of alcoholism and insanity as compared with the American born.

SCOTCH

(Number classified, 579)

The Scotch exceed the United States average in all groups except that of mental deficiency. The mental deficiency rate is lower than that of any other race and is 16.8 below the United States average. The inebriety is high; but, as in all races which have a low mental-deficiency rate, alcoholism exceeds drug taking.

SLAVONIC

(Number classified, 2,474)

This racial classification includes Bohemian, Bosnian, Croatian, Dalmatian, Herzegovinian, Montenegrin, Moravian, Polish, Russian, Ruthenian, Serbian, Slovak, and Slovenian. The Slavs have a high mental-deficiency rate, in spite of which their inebriety is alcoholic rather than narcotic. Both varieties of inebriety are below the United States average. The comparative infrequency of epilepsy is worthy of remark, especially in view of the high mental deficiency. In spite also of the sluggishness indicated by the excess of mental deficiency, they have an emotional sphere of some activity, as is shown by the excess of psychoses among them.

CORRELATIONS OF NEUROPSYCHIATRIC WITH OTHER CLINICAL CONDITIONS

In the following pages, in which the nine different clinical groups are described in detail, it appears that a certain "antagonism" exists between some of the different clinical conditions. That is, where a given condition exists in excess, other conditions vary in a way that can not altogether be explained by the variations inevitable in a method of distribution percentage average of the preponderance on one condition over another. For example, the variations between mental defect and alcoholism are constant: Where one rises, the other falls. With these two this relationship or antagonism is constant as concerns States' populations and native and foreign born races. It is believed that the connections of these two conditions have a certain significance as to the environmental condition, perhaps of the traits of character of the peoples concerned. Drug addiction, the psychoses, and endocrinopathies showed a similar disharmony with mental defect, though not so conclusively as with alcoholism. Efforts to establish correlations between the psychoneuroses and constitutional psychopathic states have been less successful. There seems to be no correlation of symptoms between the psychoneuroses and the endocrine group. The character of epilepsy in this respect is that it so nearly corresponds in both states and races with the United States average. This matter will be considered in more detail below under the separate captions.

MENTAL DEFECT

The outstanding features in regard to mental defect, as revealed by the statistics herein, are its wide distribution throughout the United States, with an especial excess in the Negro and the American Indian; its apparent antagonism to alcoholism, in that in the communities and races where it exceeds the United States distribution average, alcoholism falls below it, and vice versa.

It is a definite clinical entity, classifiable and distinct from insanity or any other of the different neuropsychiatric conditions, and is a result of a failure of development of the mentality up to a capacity which, as we are dealing only with adults, we may call adult capacity. Among its chief characteristics are lack of initiative, undue suggestibility, and lack of ability in meeting new situations.

The distribution of mental deficiency is postulated as an index of general intelligence, because where it is widely distributed the average intelligence can hardly fail to be lowered thereby. The standard of intelligence is lowered not only by the actual mental defectives, but by the number of dull people which the existence of mental defect implies. The standard of mental defect employed in the Army—i. e., a mentality not exceeding that of a child of 8 years⁶—implies a degree of incompetency so profound that the individual, whatever his race or surroundings, could not be counted on to take care of himself. Such a degree of inferiority is found in only a relatively small number of any race or people, but its occurrence has a direct bearing on the general intelligence and educability of the people in whom it occurs. It is probable that for every case of mental defect of the 8-year-old mentality standard, there are at least 10 cases of backward or retarded mentality.

In addition to the lowering of the general intelligence through a high proportion of mental defectives, together with the dullards which go along with them, the quality of the general intelligence is further impaired by the reduction in the chances of the existence of persons of superior intelligence.

The significance of a high proportion of distinctly inferior persons in a community becomes apparent when different countries, and especially when different races, are compared. For example, as concerns mental defect, the American Indian presents a distribution rate of more than double, and the Negro a rate little less than double, that of the rate among whites over the whole United States. This in itself is enough to explain the inability of the two races to compete with the average American. The Mexican living in the United States presents an even higher rate for mental defect (66.9 per cent) but for them, as in fact for all races which may have immigrated here within recent years, we can draw no such general conclusions as we can for the indigenous Indian and Negro. The most that can be said for the foreign races which present a high distribution rate for mental defect, such as the Slavs (37 per cent) and the Italians (32.7 per cent) is that the ones living here now are distinctly below the average United States intelligence. It would be impossible to infer that these races at home present the same degree of mental inferiority.

The extreme dissemination of so disabling a condition as mental defect throughout men of military age marks this subject as the most important department of public mental hygiene. The combined totals of the draft and camp examinations shows that it existed to such an extent that the individual was unfit as a soldier in 12.06 out of every 1,000 men examined. There were registered 10,101,506 men between the ages of 21 and 31 years, and the ratio of 12.06 per 1,000 gives for this number 121,824 unfit from mental defect, in this registrant class.

The ratio considered above includes only men who were rejected for military service. In addition there must be considered the number who were discharged on this account after they had entered the Army. This number was 10,648, or a ratio of 2.60 per 1,000.

If mental deficiency ran uniformly among persons of all ages and of both sexes, there would be, on the basis of 100,000,000 population, 1,218,000 mental defectives in the United States. This number would be an understatement, however, because, while the distribution of mental defect in the two sexes is about equal, many defectives die before reaching the age period on which the estimates are based. Also, inasmuch as the standard of rejection in the Army was low, and as for every rejection there were accepted, without question, several dull, stupid, border-line type recruits, it is easy to see that the figures of 1,218,000 must be multiplied several times before the full significance to the country of the condition is realized.

The general disadvantages of having mental defectives in an army are obvious. Their inability to learn and understand orders interferes with the training of normal recruits. Their lack of judgment makes them unfitted to accept responsibility. Their failure to reach normal standards and their undeveloped sense of obligation is a constant source of difficulty and frequently

brings them into the military courts. Of the disciplinary cases reported by neuropsychiatrists 42.3 per cent were mental defectives.

When, after the war, disabled ex-soldiers came under the charge of the Bureau of War Risk Insurance, the mental defectives had almost disappeared as hospital inmates. The explanation for this may be that they did not require hospital care, or that they had gone back to work for their families, chiefly on farms, or that they lacked the enterprise to request hospitalization.

CLASSIFICATION

In the classification of the mental defectives discovered in the Army, conventional terms were employed (see Table 6); an imbecile was considered as one capable of guarding himself against common physical danger, but incapable of earning a living; a moron as one capable of earning a living under favorable circumstances, but incapable of competing on equal terms with his normal fellows.

No idiot came under the observation of the neuropsychiatric officers, and, among the whites, morons constituted approximately two-thirds of the mental defectives and imbeciles one-third. The negroes showed a higher percentage of grave defects, as among them the imbeciles constituted 47.7 per cent of the cases and the morons, or higher grades, sank to 50 per cent with 0.8 per cent border-line cases. Of the cases rejected at local boards, as reported in the report of the Provost Marshal General, no classification as to mental grade was made. The present statistics refer to a definite group, and so it is not possible to compare the classification derived from them with classifications obtained in civil life.

METHODS OF DISCOVERING CASES

Twenty-eight per cent of the mental defectives discovered were referred by medical officers, and 26 per cent by line officers, notably company commanders. (See Table 8.) They were referred chiefly because they could not understand or learn. These two percentages disclose the satisfactory cooperation that existed between the specialists and the officers of the Army as a whole. As far as medical officers were concerned, any doubt that may have existed in their minds as to the nature of the diagnosis was relieved by the consultation, so that they could proceed confidently to the necessary steps for discharge on account of disability. Hospital beds were thereby relieved.

In connection with examinations made of members of the Army by the psychologists, all men falling into the lowest group as a result of the psychological examinations were to be referred to the psychiatrist as suitable for discharge. Information as to the exact number of cases so referred has not been obtainable. Partial reports of the section of psychology of the Surgeon General's Office give the number as 4,555 from the examination of 1,147,829 men. If a man was considered unfit for service after receiving a psychiatric examination he was recommended for discharge by the psychiatrist and the case was reported to the Office of the Surgeon General on Forms 89 and 90 Medical Department, from which the statistical data of this study have been compiled. According

to the available records, specific recommendations were made by the psychiatrists on only 936 of the cases referred. Of this number, 175 cases, or 18.7 per cent, were found to be not mental defectives. These 175 cases were diagnosed as follows: Psychoneuroses, 45; psychoses, 28; constitutional psychopathic states, 26; nervous disease and injuries, 29; endocrinopathies, 23; epilepsy, 22; and drug addiction, 2.

LENGTH OF SERVICE PRIOR TO DISCOVERY

Prior to the expiration of the average training period, 18,858, or about 86 per cent of the total number of mental defectives, had been identified. (See Table 10.) There were 1,475 mental defectives recorded at Base Hospital No. 214, the one central receiving point for such cases in the American Expeditionary Forces.² Many of these probably were border-line cases. Of the 1,475 reported as admitted to Base Hospital No. 214 as mental defectives, only 762 reached the ports of the United States under that diagnosis. Many of the others may have been put back on a duty status, after treatment in hospital and subsidence of the reactionary episode—so common among the feeble-minded under strain and excitement—that caused their admission.

A higher percentage of colored cases than of white ones was discovered in the first three months and a lower one after the first six months.

RECOMMENDATIONS FOR DISPOSITION

Table 12 shows that only 206 cases, or 1 per cent of those identified, were recommended for full duty. Mental defect was one of the neuropsychiatric conditions for which limited service was allowable, and 2,791, or 12.8 per cent, such recommendations were made. Labor battalions were regarded as organizations where the Negro, for limited service, could do well, and so a higher percentage of Negroes (16.4 per cent) were recommended for limited service than whites (11.9 per cent). The proverbial freedom from physical illness of mental defectives is substantiated by the fact that only 76 cases (0.3 per cent) were retained in the hospital for treatment.

DELINQUENCY

Of the total number of mental deficiency cases, 562 white and 71 colored men, or 3 per cent, were referred to the neuropsychiatric officers for opinion as to the causes of misconduct. Mental deficiency heads the list of neuropsychiatric conditions found among the men tried for military offenses, constituting 40.5 per cent of the white and 64 per cent of the colored. But a larger percentage of constitutional psychopaths and insane were delinquent than of mental defectives.

Mental deficiency was not so frequent among the neuropsychiatric prisoners at Fort Leavenworth as it was among delinquents in the camps. This fact may indicate that the mental defectives are in general the petty offenders and the individuals who commit chiefly misdemeanors.

TABLE 36.—*Classification of family neuropathic taints among mental defectives, according to disorder and relatives*

Neuropathic taint in family	Number of cases	Number of relatives				
		Fathers	Mothers	Grand-parents	Siblings ^a	Collaterals ^b
		White				
Nervous disease.....	2,967	686	1,542	79	1,419	376
Mental disease.....	2,146	353	403	194	650	972
Inebriety.....	2,630	1,963	55	55	781	446
Mental deficiency.....	1,478	244	243	9	1,339	151
Total.....	9,221	3,246	2,243	337	4,189	1,945
Colored						
Nervous disease.....	489	110	196	32	399	139
Mental disease.....	709	83	113	52	264	432
Inebriety.....	398	248	18	8	196	87
Mental deficiency.....	274	32	36	3	292	52
Total.....	1,870	473	363	95	1,151	710
Total, white and colored.....	11,091	3,719	2,606	432	5,340	2,655

^a Siblings include brothers and sisters.^b Collaterals include uncles, aunts, and cousins.

FAMILY HISTORY

The information covering family history is open to the criticism that it was furnished by a class of patients less qualified to be accurate about such matters than most representatives of the neuropsychiatric group. (See Tables 13 to 17.) Mental defectives, when questioned about their forbears, may well be suspected of not having the knowledge that would enable them to give correct answers. They might and probably would know if members of the immediate family had been in an institution, but otherwise would be unaware of the existence of psychiatric conditions. This would be particularly the case for histories of mental deficiency itself which, in certain sections of the country, exists as a family characteristic and so would not be remarked by members of the family. This probably accounts for the relatively few instances of mental defect in forbears, as shown in Table 17. About four-fifths of the histories recorded data on these several points. Psychopathic inheritance existed in a little more than one-half of the whites and a little less than one-half of the colored.

Table 36 shows the large number of mothers among both the white and colored who had nervous diseases; also the large number of inebriates, chiefly alcoholics, among the fathers. Mental disease and defects are about equally balanced between fathers and mothers among both the white and colored.

The same table shows the large number of brothers and sisters—listed in the table as siblings—who were victims of nervous disease and mental defect. This appears to be true for both the white and colored. Mental diseases also ran high among the brothers and sisters of the colored mental defectives. The table also shows the small number of mental defectives and the large number of cases of mental disease among collateral relatives.

AGE

Relatively few of the colored cases were found to be under 20 years of age, the greater percentage being between the ages of 20 and 25 years. (See Table 20.) As already stated, of the men placed in Class I between the ages of 21 and 29 years, 62 per cent were between the ages of 21 and 24 and 38 per cent between the ages of 25 and 29. The corresponding percentages for the cases of mental deficiency are 59.4 and 40.6. The difference of less than 3 per cent would probably justify the conclusion that between the ages of 21 and 29 there is no difference of significance between the ages of a group of mental defectives and normal individuals.

When the ages of mental defectives are compared with the other groups of neuropsychiatric disorders, especially those which had a definite time of beginning, different conclusions appear. About 9 per cent of the white mental-deficiency cases were under 20 years of age, which percentage is the largest for any group, constitutional psychopaths and epileptics standing next in order of frequency. The percentage of white mental defectives over 30 years of age was smaller than for any other group except the endocrinopathies. The percentage of white epileptics over 30 was very slightly larger than that of the mental defectives. Among the other groups, the percentages of individuals over 30 years of age ran from 5 to over 50 per cent higher than the percentage for the mental defectives.

EDUCATION

Mental defectives, as might be expected, made the poorest showing in regard to education of any of the neuropsychiatric groups. (See Table 23.) The subject is best considered in connection with Table 22, prepared from certain selected examinations made by the psychological examiners, which indicates the results of their inquiries into the education of drafted men as a whole. One is struck, first of all, by the great difference between the education given the normal and that given the defective. In considering the disparity between the two, it should be borne in mind that the class here under discussion is composed of the higher grades of defectives, many of whom are, in certain respects, educable. Yet one-third of the whites and two-thirds of the colored had no education at all. No effort, apparently, was made to keep them in school. Fifty-nine per cent of the defectives had had some schooling, but only a small number reached high school, and the only college representatives were found in the officers' training camps.

The difference in the efforts at education of the Negroes as compared with the whites is conspicuous. The fact that such a large number of the negroes received no education may account in part for the large number reported by the psychologists as being defective.

ECONOMIC CONDITION

The numbers of the white and the colored mental defectives in marginal circumstances were larger than the numbers for any other group. (See Table 24.) This would be expected, since mental defectives have low earning power and lack ordinary prudence.

HISTORY OF VENEREAL DISEASES

Table 25 shows that there were relatively few instances of preexisting venereal diseases among mental defectives. This corresponds with civil experience as concerns mentally defective males, as the sexual instincts are frequently dormant in these individuals. The rate of admission of the existence of infections of some kind was about four times as high among the colored as among white mental defectives. The rate of syphilitic infection being about eight times and that of gonorrheal infections about four times as high.

Among the mentally defective whites the percentage for all venereal diseases was lower than among any other group of neuropsychiatric disorders; for example, it was 12.8 per cent among white defectives and 54.2 per cent among white drug addicts; among the colored the percentage was lower than for any other group of colored except that of alcoholism, of which latter conditions the numbers were too small for the computation of rates.

The rate of syphilitic infections among the mentally defective whites was relatively low; it was equaled, however, in the endocrine group and was not much smaller than the rates for the epileptics and the psychoneurotics. Among the colored mentally defective the rate for syphilitic infections was lower than for any other group except that of the psychoneuroses. Gonorrheal infections were comparatively infrequent among the white mental defectives; among the colored the rate was higher for mental defectives than those for the groups of alcoholism and psychoses.

ALCOHOLIC HABITS

There is practically no difference between the white and colored cases of mental deficiency, in so far as alcoholic habits are concerned. (See Table 26.) The percentage of moderate drinkers for both white and colored mental defectives is slightly larger than the percentage for all neuropsychiatric cases. The mental defective group ranked sixth in order of frequency as to intemperance.

MARITAL STATUS

Including the widowed and divorced, 15.7 per cent of mental defectives were married, which is a slightly higher percentage than that (13.2 per cent) found among the total of Class I men, and a lower percentage than that of neuropsychiatric cases generally, 19.1 per cent. (See Table 27.) The percentage of marriage was about three times as great among the colored defectives as among the white, but even in them the percentage was smaller than for any other colored group, except alcoholism.

As a class, defectives show less matrimonial inclinations than any other neuropsychiatric individuals. This is in contradiction to the common theory that lack of general intelligence is the chief factor in early marriage. Inasmuch as the mental defectives married relatively less than the other neuropsychiatric groups, and groups in which temperamental instability is conspicuous, it would seem that the explanation of early marriage would be found in the sphere of the emotions rather than in that of the intelligence. The relative number

divorced among defectives was also lower than for any other group, except the endocrine group, although among Negro defectives it was higher than that for the group of epilepsy, endocrine disorders, drug addicts, insane, or constitutional psychopathic states.

HOME ENVIRONMENT—URBAN OR RURAL

While 51 per cent of the population of the United States resides in communities of 2,500 or more (United States Census, 1920), only one-third of the mental defectives of the Army came from such urban communities. (See Table 28.) The rate of mental defectives from rural environment is higher among the colored than among the whites. This is accounted for by the excess of rural residence of the former.

Of all the neuropsychiatric conditions, mental defect was the only one for which the percentage of cases coming from rural districts exceeded the percentage of the population residing in rural districts. The general explanation is that the great flocking to the cities, so characteristic of modern times, is a movement carried out by the more progressive of the community.

STATE OF RESIDENCE (WITH GAIN OR LOSS FROM IMMIGRATION OR MIGRATION)

Among the whites for the entire United States mental deficiency constituted 29.2 per cent of all neuropsychiatric disorders. (See Table 37.) In 19 States (Table 38) the percentages are larger than for the United States as a whole.

TABLE 37.—*State of residence of mental defectives. Percentages^a*

State of residence	White		Colored		State of residence	White		Colored	
	Number	Per cent	Number	Per cent		Number	Per cent	Number	Per cent
Alabama.....	397	36.0	656	66.4	New Hampshire.....	36	27.7	-----	-----
Arizona.....	18	15.0	1	16.6	New Jersey.....	393	27.6	13	21.0
Arkansas.....	384	43.7	231	62.4	New Mexico.....	210	61.2	-----	-----
California.....	377	22.0	5	14.3	New York.....	1,271	19.8	47	29.2
Colorado.....	120	24.8	-----	-----	North Carolina.....	651	46.7	154	40.8
Connecticut.....	163	26.7	6	46.2	North Dakota.....	101	38.5	-----	-----
Delaware.....	21	22.8	15	37.5	Ohio.....	901	23.9	57	33.5
Florida.....	152	31.1	15	11.5	Oklahoma.....	398	33.3	95	57.9
Georgia.....	511	33.3	141	31.7	Oregon.....	55	18.1	-----	-----
Idaho.....	44	26.7	-----	-----	Pennsylvania.....	1,522	27.0	119	42.0
Illinois.....	791	19.9	60	41.1	Rhode Island.....	65	29.2	4	40.0
Indiana.....	417	23.3	14	32.6	South Carolina.....	318	43.4	219	40.0
Iowa.....	239	25.3	3	12.5	South Dakota.....	101	333.1	-----	-----
Kansas.....	197	21.6	11	21.6	Tennessee.....	570	43.0	501	71.8
Kentucky.....	771	41.1	67	38.5	Texas.....	414	25.5	114	33.4
Louisiana.....	275	28.7	332	48.3	Utah.....	31	20.5	-----	-----
Maine.....	202	51.5	-----	-----	Vermont.....	38	33.6	1	100.0
Maryland.....	396	44.9	319	74.4	Virginia.....	656	45.5	280	48.6
Massachusetts.....	400	25.7	7	33.3	Washington.....	115	26.1	2	100.0
Michigan.....	623	29.2	15	32.6	West Virginia.....	469	38.6	30	37.5
Minnesota.....	262	22.2	1	9.1	Wisconsin.....	363	27.0	1	25.0
Mississippi.....	308	35.4	328	44.6	Wyoming.....	25	21.7	-----	-----
Missouri.....	922	33.8	68	24.4	District of Columbia.....	26	16.1	48	52.7
Montana.....	45	16.7	1	25.0	State unascertained and others.....	901	-----	73	-----
Nebraska.....	125	25.1	1	9.1	United States.....	17,803	29.2	4,055	48.3
Nevada.....	11	18.3	-----	-----					

^a Percentages are based on the total neuropsychiatric cases of each color from each State.

TABLE 38.—*Per cent distribution of neuropsychiatric conditions in 19 States in which the rates for mental deficiency exceeded the United States rate of 29.2 per cent*

State of residence	Mental deficiency	Psycho-neuroses	Psychoses	Neuro-logical	Epilepsy	Constitutional psychopathic states	Endo-crinopathies	Drug addiction	Alcoholism
United States.....	29.2	17.0	12.1	10.0	8.6	9.7	7.4	3.0	3.0
Alabama.....	36.0	20.1	11.8	9.9	9.3	7.3	4.0	1.2	.5
Arkansas.....	43.7	21.0	9.1	7.2	8.4	6.4	1.4	2.6	.2
Florida.....	31.1	18.4	14.5	9.2	11.2	8.8	3.5	2.9	.4
Georgia.....	33.3	13.0	13.4	11.5	7.9	11.8	6.1	2.5	.7
Kentucky.....	41.1	14.0	6.9	11.8	8.8	9.4	4.2	1.2	2.6
Maine.....	51.5	13.0	7.7	5.4	9.2	8.9	.5	1.3	2.6
Maryland.....	44.9	13.3	10.4	7.6	4.5	10.7	4.4	1.6	2.5
Mississippi.....	35.4	23.2	9.8	8.3	10.9	6.7	2.1	3.1	.6
Missouri.....	33.8	15.9	8.5	11.4	6.3	9.4	8.5	3.0	3.3
New Mexico.....	61.2	7.0	5.5	7.3	8.5	6.1	3.5	.3	.6
North Carolina.....	46.7	17.7	8.0	6.6	9.6	3.9	6.1	.7	.6
North Dakota.....	38.5	14.1	12.6	9.2	8.0	10.3	3.8	.4	3.1
Oklahoma.....	33.3	15.6	11.8	12.7	6.7	6.7	4.0	7.4	1.9
South Carolina.....	43.4	19.6	7.0	8.2	8.9	4.1	6.1	1.9	.8
South Dakota.....	33.1	14.4	10.5	12.8	6.6	3.9	16.1	.3	2.3
Tennessee.....	43.0	14.3	9.6	11.9	8.0	3.8	5.1	3.5	.8
Vermont.....	33.6	16.8	13.3	10.6	8.8	10.6	3.5	-----	2.7
Virginia.....	45.5	12.1	9.2	7.0	5.8	7.4	10.9	1.2	1.0
West Virginia.....	38.6	12.6	8.2	9.1	6.3	7.8	15.7	1.1	.7

While all but four of these States are southern, the percentages refer to white cases only. The high degree of mental defect known to exist in the South is commonly laid to the door of the Negro. The preceding figures indicate plainly that among the southern white population mental defect is more general than among the population of the United States as a whole.

It is possible to form some idea as to the incidence of this condition in any State by comparing the rate of rejection by local boards of the State with the number of cases from that State found at camps by the neuropsychiatric examiners.

Table 5 gives the rate of rejections for mental defect per 1,000 men examined by the local draft boards of the different States. By comparing these rates with those of the neuropsychiatric identifications at camps, it will be observed that a high rate of rejection for mental defect at local boards did not mean necessarily a low rate of cases found at camps. On the contrary, it will be seen that, with the exception of Arkansas and Missouri, the high rejection rates by local boards were in the States in which a high degree of mental defect was found by the neuropsychiatric examiners. The local boards of Vermont rejected proportionately more than those of any other State (27.13 per 1,000), but even that large number of rejections was not sufficient to bring Vermont below the United States average of 29.2 per cent as determined by the neuropsychiatric examinations.

The following States equaled or fell below the United States neuropsychiatric average for white mental defectives:

	Per cent		Per cent
Arizona.....	15. 0	Colorado.....	24. 8
District of Columbia.....	16. 1	Nebraska.....	25. 1
Montana.....	16. 7	Iowa.....	25. 3
Oregon.....	18. 1	Texas.....	25. 5
Nevada.....	18. 3	Massachusetts.....	25. 7
New York.....	19. 8	Washington.....	26. 1
Illinois.....	19. 9	Idaho.....	26. 7
Utah.....	20. 5	Connecticut.....	26. 7
Kansas.....	21. 6	Pennsylvania.....	27. 0
Wyoming.....	21. 7	Wisconsin.....	27. 0
California.....	22. 0	New Jersey.....	27. 6
Minnesota.....	22. 2	New Hampshire.....	27. 7
Delaware.....	22. 8	Louisiana.....	28. 7
Indiana.....	23. 3	Michigan.....	29. 2
Ohio.....	23. 9	Rhode Island.....	29. 2

In these States, there is again a general, though not absolute, agreement between the results of the neuropsychiatric examinations and those of the local boards. For example, in Arizona, which is lowest on the list, only 2 per 1,000 were rejected by home boards, whereas in Rhode Island, which is highest on the foregoing list, there were 15.18 such rejections per 1,000.

When the colored alone are considered, Table 5 is not of use. The Provost Marshal General's report, upon which this table was based, did not distinguish between colored and white mental defectives.

The United States distribution average of mental deficiency among the colored neuropsychiatric cases was 48.3 per cent. The following States exceeded this rate of 48.3 per cent for colored:

	Per cent		Per cent
Vermont.....	100. 0	Arkansas.....	62. 4
Washington.....	100. 0	Oklahoma.....	57. 9
Maryland.....	74. 4	District of Columbia.....	52. 7
Tennessee.....	71. 8	Virginia.....	48. 6
Alabama.....	66. 4		

It is to be noted that Maryland, Tennessee, and Arkansas were also high in mental defect among whites. (See Table 37.)

The States for which the distribution percentages equaled or were less than the percentage for the United States colored were as follows:

	Per cent		Per cent
Minnesota.....	9.1	Massachusetts.....	33.3
Nebraska.....	9.1	Texas.....	33.4
Florida.....	11.5	Ohio.....	33.5
Iowa.....	12.5	Delaware.....	37.5
California.....	14.3	West Virginia.....	37.5
Arizona.....	16.6	Kentucky.....	38.5
New Jersey.....	21.0	Rhode Island.....	40.0
Kansas.....	21.6	South Carolina.....	40.0
Missouri.....	24.4	North Carolina.....	40.8
Montana.....	25.0	Illinois.....	41.1
Wisconsin.....	25.0	Pennsylvania.....	42.0
New York.....	29.2	Mississippi.....	44.6
Georgia.....	31.7	Connecticut.....	46.2
Indiana.....	32.6	Louisiana.....	48.3
Michigan.....	32.6		

This list is peculiar in that Florida and Georgia are well below the United States average for white mental defectives.

Table 39 shows five races in which the distribution of mental defect exceeded the United States mental deficiency average of 29.2 per cent.

TABLE 39.—*Per cent distribution of neuropsychiatric conditions among six races in which the mental deficiency distribution rate exceeded the United States mental deficiency white rate of 29.2 per cent*

Race	Number classified	Mental deficiency	Psychoneuroses	Psychoses	Neurological conditions	Epilepsy	Constitutional psychopathic states	Endocrinopathies	Drug addiction	Alcoholism
United States (white).....	60,993	29.2	17.0	12.1	10.0	8.6	9.7	7.4	3.0	3.0
African (Negro).....	8,401	48.3	13.1	6.6	9.5	13.3	3.0	3.6	2.3	.3
American Indian.....	124	62.9	4.8	4.0	4.0	7.3	8.9	2.4	3.2	2.4
Armenian.....	69	37.7	15.9	14.5	11.6	10.1	8.7	1.4		
Italian.....	2,452	32.7	18.1	9.7	7.8	12.8	9.3	3.8	5.3	.4
Mexican.....	384	66.9	4.2	4.7	5.7	11.7	3.9	2.3	.5	
Slavonic.....	2,474	37.0	15.3	14.5	7.3	6.6	10.0	5.7	1.2	2.5

NATIVITY

Two thousand and sixty-one, or 9.5 per cent of the ascertained white cases of mental deficiency were of foreign birth. Using all the neuropsychiatric cases for the purpose of comparison, it is found that 10.5 per cent were foreign born. As this percentage does not differ greatly from the percentage for mental defectives alone, the conclusion seems warranted that mental deficiency did not exist to a disproportionate extent among the foreign born.

CORRELATIONS WITH OTHER CLINICAL CONDITIONS

Throughout the present material mental deficiency presents significant correlations with the other clinical conditions, and these correlations may be taken as throwing some light on the extent and quality of the intelligence of the people concerned.

As regards psychoses or mental disorders, it might be assumed that these would be less apt to occur when there was a high rate for mental deficiency. The existence of a mental disease implies a developed intelligence of a character that would possess imagination, ideas, and a certain quickness in mental processes. As is well known, distinct types of mental diseases are practically unknown in childhood, the period before the intelligence is fully developed. The hypothesis that mental disease implies a developed intelligence and is less frequent among people where the intelligence is under-developed is borne out by the tables. Nineteen States (Table 38) exceeded the mental deficiency distribution rate of 29.2 per cent, and showed among themselves an average distribution of mental defect of 39.3 per cent. But the insanity distribution rate for these States was below that for the United States, being particularly low in the States with high distribution of mental defect, viz, Arkansas, Kentucky, Maine, New Mexico, North Carolina, Tennessee, and Virginia. This same correlation holds true for the five classified native-born races (Table 39) which exceeded the distribution rate of 29.2 per cent for mental defect (with the exception of the Slavonic), namely, for the Negroes, American Indians, Italians, and Mexicans.

The converse of the above correlations between mental defect and insanity will be shown to hold true when the distribution rate of insanity is above the average.

Between mental deficiency and alcoholism there seems to exist a very definite antagonism, in that the two conditions do not exist in great abundance in the same communities and people. Where the rate for one rises, the rate for the other falls. Of the 19 States with an excess distribution of mental deficiency, only two have an excess of alcoholism, and in these 19 States the average distribution of alcoholism, including alcoholic psychoses, is 1.6 per cent as compared with 3 per cent—the United States distribution average. (Table 38.)

This same antagonism is observed in the different races. None of the five races which exceeded the United States distribution rate for mental deficiency attain the alcoholic distribution rate of 3 per cent. Similar conditions prevail in the foreign-born races classified. The converse will be shown to hold good when the correlations of alcoholism are stated.

As concerns epilepsy, in the States in which the distribution of mental deficiency was over average, there is practically no change; in the races there is a slight increase.

As concerns the psychoneuroses, States and races with an above-average rate of mental deficiency show a decrease. Constitutional psychopathic states which are akin to mental disorders, have a lower distribution average in both the States and the races which show an excess distribution of mental deficiency.

There is a tendency in some States for endocrine disturbances to sink when mental defect rises, and vice versa. Correlations exist between mental deficiency and drug addiction similar to those mentioned as existing between mental deficiency and alcoholism. Of the 19 States over average as regards mental deficiency, only three, Mississippi, Oklahoma, and Tennessee, exceeded

the average distribution rate for drug addiction. Of the five races in which mental deficiency is over average, only two, namely, the American Indian and the Italian, exceed in drug addiction. (Table 39.) Of the four foreign-born races (Table 33), the Italian is the only one which exceeds in mental deficiency.

It would seem, therefore, that an excess of mental deficiency in a people assures a below average amount of alcoholism, insanity, psychopathic states, and drug addiction; the converse, still to be shown, is that when the latter conditions are in excess mental deficiency recedes.

PSYCHONEUROSES

The information as to the psychoneuroses obtained by the compilation of the reports of the neuropsychiatric examinations throws some light on certain important points concerning them. In the first place, the numbers alone were surprising. While physicians realized that there were many complaining people in hospitals, in dispensaries, and in the world generally, whose symptoms could not be associated with any definite pathological condition, few realized that there were so many young men in the country in whom functional nervous disease reached a point to constitute a definite disability. But when more than 11,000 of them were identified in the camps alone, it is evident that these conditions demand the serious attention of a government which hopes to conserve its man power.

The most important question of all in regard to the psychoneuroses, their essential character, can not at present be decided. Intensive investigation, the need of which the present study makes plain, must decide as to the essential characters of these disorders. The evidence accumulated throughout the World War, both in this country and in France, indicates plainly that the behavior of psychoneurotics is more strongly motivated by impulses looking toward an improvement of their own personal situation than is observed in most people. For the most part their symptoms fluctuate in direct ratio with the unpleasant features of the situation. In the camps, a rumor of overseas orders would bring about an increased flow of applications for admission to the hospitals; overseas, the universal employment of the term "shell-shock" acted as a kind of moral contagion in creating these cases; during the armistice, more than one came out frankly and said he thought his paralysis, or whatever the disability was, would cause him no further trouble if he could be discharged from the Army.

But while these "selfish" trends in the psychoneurotic, in the Army as in civil life, are unmistakable, it is yet to be shown in what proportion of the patients they are really outside personal control. It is certain that many have been labeled psychoneurotics when they should have been recognized as suggestible, credulous, uninformed young men, who really were ready to carry on if they knew how. Both in the home camps and in the American Expeditionary Forces numerous instances were recorded of timid, immature, frightened youthful soldiers who really thought they were ill or "shell-shocked," yet who, under the benefits of rest, explanation, and kindly encouragement, forgot all their symptoms and settled down to their work like real men. The symptoms most

frequently complained of which could be explained away were those referred to the gastrointestinal, cardiovascular, and sexual systems. The patients had often worried about them long before the war. In combat areas, recovery from such symptoms became much more assured when beds were set aside in field hospitals for these patients. These individuals, badly frightened, shaken up, or even slightly wounded, were returned to their organizations, instead of being sent, as they would have been sent, under other arrangements, to the rear. This phase of the subject—the phase having to do with psychotherapeutic reconstruction—touches primary education very closely and will be less acute when education becomes more generalized, and especially when educational programs include character up-building and world contact, as well as scholastic performance.

The association of the psychoneuroses with organic diseases is of importance. It is quite possible that many conditions were denominated psychoneurotics when they should have been denominated in terms of some organic condition. The superficial reaction was considered as primary, when it should have been recognized as secondary to a more serious organic disability.

The statistics show the psychoneuroses as more frequently associated with alcoholism and less frequently with poor economic conditions than in the case of the other neuropsychiatric conditions.

A problem for the future is the determination of the relationship between endocrine disorders and the psychoneuroses. From examinations of individual cases of these "situation neuroses" there is good ground for believing that they are often associated with some disharmony or defect in the function of the endocrine glands. The statistics in this chapter can hardly be utilized in support of such theory.

The question of the association of psychoneuroses with mental defect, while not elucidated by the present statistics, is one of importance. It was remarked in our hospitals, as well as in those of other countries, that many of the functional nervous cases presented inferior intelligence. This seemed to be particularly the case in hysteria, especially in the variations presenting paralysis and other somatic symptoms. It is to be noted that the negro, in whom mental defect is more prevalent than in the white, had a higher proportion of hysteria than that of other psychoneurotic conditions.

CLASSIFICATION

The 11,443 classified cases of psychoneuroses were distributed as shown in Table 6. There may be some question as to the propriety of including enuresis in this group, as probably some of these cases were mental defectives, others were endocrinopaths. The number of stammerers is notable. The clinical histories indicated the essentially psychoneurotic character of this disability.

The percentages of neurasthenia and psychasthenia were much higher among the whites than among the colored, while those of hysteria and stammering were much lower among the whites. The latter conditions comprised 70.7 per cent of the colored psychoneurotics.

METHODS OF DISCOVERING CASES

The neuropsychiatrists apparently found some difficulty in identifying cases of psychoneuroses at the routine examinations. (See Table 8.) Perhaps the cases of psychoneuroses required some time for the symptoms to come to the front. More negroes, 47.8 per cent, as compared to 35.2 per cent of the whites, were identified immediately. That the psychoneuroses are more conduct disorders than certain of the other groups is shown by the fact that a considerably higher percentage of them, 25.3 per cent, than of endocrine troubles, alcoholism, or even drug addiction, were referred by organization commanders. Forty-five cases were referred by psychologists and 12 cases as a result of delinquency.

LENGTH OF SERVICE PRIOR TO DISCOVERY

Although not easily identified at first, these cases broke down promptly, 44.8 per cent of the white and 64.1 per cent of the colored being recognized in less than one month. (See Table 10.) Since a relatively larger proportion of colored were identified immediately, and a larger proportion of them broke down so early in training, it would seem that the mechanism of the psychoneuroses in the colored was a simpler affair than in the whites. Of the whole group, 84.5 per cent had been detected before the expiration of six months, leaving 15.5 per cent to break down when the situation became more acute, as it did in this country when overseas orders came.

TIME OF ONSET

Before entering the service 95.1 per cent of the cases had had symptoms of their disorder. (See Table 11.) In this respect there was practically no difference between the whites and the colored. Only 556 cases developed after entering the service. Of these, about half developed before the expiration of six months.

RECOMMENDATIONS FOR DISPOSITION

Nine thousand one hundred ninety-seven, or 80.4 per cent, of the cases were recommended for discharge—the smallest percentage for any one group. (See Table 12.) A comparatively large number were recommended for limited service, especially among the colored cases. Only 1.4 per cent were recommended for duty.

In the American Expeditionary Forces, the distribution percentage average of the psychoneuroses had increased. It became 30 per cent as compared with the mobilization distribution average of 16.5 per cent. After the war, when the patients had become beneficiaries of the Bureau of War Risk Insurance (March, 1921), the distribution average dropped to 20.2 per cent—lower than it was in France, but still higher than in the home camps. These distribution averages, shifting about in this manner under different circumstances, are quite in accord with the idea of the psychoneurosis being a situation neurosis. The situation at home, acute enough as it was, and becoming worse as the war showed no signs of ending, became much more acute when the troops reached the country where the fighting was actually going on,

where many of them even had to engage in it. With the advent of peace some of these cases recovered, almost over night; most of them showed a steady improvement in all symptoms. In some of those left to be hospitalized by the Bureau of War Risk Insurance, the symptoms had doubtless become fairly well fixed, and others, in much the same way that litigants in personal injury suits maintain their symptoms, sought hospitalization for the purpose of being idle and to secure the compensation accruing to service disability.

DELINQUENCY

Of the misconduct cases, 66, or 4.4 per cent, of the total were cases of psychoneuroses. This number is 0.58 per cent of the total group of 11,443 cases—a percentage very low when compared with 5.1 per cent for the insane and 4.4 per cent for the constitutional psychopaths.

FAMILY HISTORY

Evidence in support of the theory that the psychoneuroses develop especially in neurotically predisposed individuals is shown in Tables 13 to 17. Of the ascertained cases, 57.7 per cent, with little difference between the white and colored, gave a family history of neurotic taint, being exceeded only by epilepsy, endocrine disturbances, and constitutional psychopathic states. In this respect the percentage for the psychoneuroses exceeded that for alcoholism and for drug addiction by about 17.

The psychoneuroses showed relatively the highest proportion of histories of family nervous diseases (37.5 per cent) and, after alcoholism, the largest proportion of mental deficiency (0.8 per cent). History of inebriety was also relatively low in these cases.

AGE

The psychoneuroses followed approximately the age distribution of the drafted men of the Army as far as the group between the ages of 25 and 29 years was concerned. (See Table 20.) They fell below the distribution in the 20–24 years' period and rose in the group over 29. This may be an indication of the psychoneuroses being somewhat more common among volunteers. The colored psychoneurotics inclined to younger age periods than the whites.

EDUCATION

The psychoneurotic group contained persons above the neuropsychiatric average of education (see Table 23), so far as high school and college are concerned. On the other hand, a relatively higher proportion of them had no schooling, than of the insane, neurological cases, constitutional psychopaths, endocrine cases, drug addiction, and inebriety.

ECONOMIC CONDITION

A larger percentage (17.7 per cent) of psychoneurotics were in comfortable circumstances (see Table 24) than any other group. This would indicate that nutrition and similar factors in the prevention of disease were less important in the psychoneuroses than in other neuropsychiatric conditions.

HISTORY OF VENEREAL DISEASES

Mental deficiency showed an under average of cases with previous venereal history, while alcoholism, drug addiction, and neurological conditions showed an over average. (See Table 25.) The remaining five groups, especially representative of abnormal mental states, were practically the same in that they gave a venereal history in about 25 per cent of the cases. This is probably under the average of young men in general. As elsewhere, the colored gave higher averages than the whites, especially in reference to syphilis.

ALCOHOLIC HABITS

From the percentage of intemperate men, 5.7 per cent, and of abstainers 48.6 per cent, among cases of psychoneuroses, it appears that alcohol does not play a prominent rôle in these disorders. (See Table 26.) In regard to the use of alcohol, the psychoneurotics, both white and colored, showed up better than any other neuropsychiatric patients except the endocrine cases.

MARITAL STATUS

Twenty-three and eight-tenths of the psychoneurotics had married (Table 27), the proportion being higher than any of the neuropsychiatric group, and more than 10 per cent above the married percentage of Class I men as a whole. The colored showed a still higher married percentage.

HOME ENVIRONMENT—URBAN OR RURAL

There was a slight preponderance of urban as opposed to rural residence among these cases. (See Table 28.)

STATE OF RESIDENCE (WITH GAIN OR LOSS FROM MIGRATION OR IMMIGRATION)

Twenty-four States, namely, Alabama, Arkansas, Colorado, Connecticut, Florida, Illinois, Indiana, Iowa, Kansas, Louisiana, Massachusetts, Minnesota, Mississippi, New Hampshire, New York, North Carolina, Ohio, Oregon, Rhode Island, South Carolina, Utah, Wisconsin, Wyoming, District of Columbia, exceeded the United States distribution rate of 17. (See Tables 29 and 31.) Owing to differences in classification, the neuropsychiatric averages in these States can not be compared with the average attained at the local boards.

NATIVITY

Twelve per cent of the psychoneurotics were of foreign birth, being below the average of Class I men and above the average of foreign born in the total number of neuropsychiatric cases considered.

CORRELATIONS WITH OTHER CLINICAL CONDITIONS

There were only slight variations in the distribution of the psychoneuroses as between either States or races. In one-half the States the average exceeded the United States average of 17 per cent (Table 40). But the average excess was not remarkable. The widest variation in these States in other groups was found in reference to endocrine disturbances, the average percentages of these latter sinking to 1.3 below the United States average of 7.4.

In all the States which exceeded the United States rate for psychoneuroses by several points, viz, Arkansas, Louisiana, Mississippi, New Hampshire, Wyoming, and the District of Columbia, there was a marked drop in the endocrine rate.

Of the classified races (see Table 34), in the American Indian and the Mexican the psychoneuroses fell far below the United States average of 17 per cent (see Table 40). Both of them had an under average of endocrine disturbances and an excess of mental deficiency. The Greeks and the Hebrews greatly exceeded the United States average of 17 per cent; and both of these fell below the United States average for endocrine troubles.

TABLE 40.—*Per cent distribution of neuropsychiatric conditions in 24 States in which the rate for psychoneuroses exceeded the United States rate of 17 per cent*

State of residence	Psycho- neuroses	Mental defi- ciency	Psy- cho- ses	Neuro- logical	Epi- lepsy	Consti- tutional psycho- pathic states	Endo- crinop- athies	Drug addic- tion	Alco- hollism
United States	17.0	29.2	12.1	10.0	8.6	9.7	7.4	3.0	3.0
Alabama	20.1	26.0	11.8	9.9	9.3	7.3	4.0	1.2	.5
Arkansas	21.0	43.7	9.1	7.2	8.4	6.4	1.4	2.6	.2
Colorado	18.2	24.8	14.5	10.7	11.8	9.5	6.4	2.1	2.1
Connecticut	17.8	26.7	15.9	7.7	10.6	10.3	3.1	2.9	4.9
Florida	18.4	31.1	14.5	9.2	11.2	8.8	3.5	2.9	.4
Illinois	20.6	19.9	13.8	10.7	8.3	9.1	9.8	1.5	6.2
Indiana	20.0	23.3	8.8	14.3	7.5	14.5	8.3	.6	2.8
Iowa	17.8	25.3	16.4	9.9	8.4	9.3	8.2	2.6	2.1
Kansas	18.2	21.6	10.4	13.5	6.3	9.8	15.4	2.5	2.2
Louisiana	30.8	28.7	9.1	6.2	12.1	7.6	2.3	2.5	.6
Massachusetts	18.1	25.7	14.4	6.9	10.4	12.2	1.7	2.7	7.9
Minnesota	19.5	22.2	14.0	10.9	7.8	7.1	12.0	2.2	4.3
Mississippi	23.2	35.4	9.8	8.3	10.9	6.7	2.1	3.1	.6
New Hampshire	23.4	27.7	10.2	7.3	10.2	12.4	1.5	2.9	4.4
New York	18.3	19.8	11.6	8.8	10.0	13.1	6.3	8.4	3.5
North Carolina	17.7	46.7	8.0	6.6	9.6	3.9	6.1	.7	.6
Ohio	19.7	23.9	11.3	10.9	7.7	8.6	12.8	2.7	2.3
Oregon	19.1	18.1	19.7	8.9	9.5	16.4	5.3	2.6	.3
Rhode Island	18.8	29.3	9.9	7.2	9.4	9.9	4.0	4.9	6.7
South Carolina	19.6	43.4	7.0	8.2	8.9	4.1	6.1	1.9	.8
Utah	19.2	20.5	18.5	6.0	7.9	12.6	4.0	7.9	3.3
Wisconsin	19.2	27.0	12.6	11.6	6.8	6.2	12.6	.7	3.2
Wyoming	24.3	21.7	8.7	11.3	8.7	9.6	5.2	2.6	7.8
District of Columbia	23.6	16.1	19.9	14.3	6.2	8.79	6.2	2.5	2.5

As between the native and foreign born there were no significant differences. Thus the above correlations furnish little information as to the relationships between the psychoneuroses and mental deficiency; and they do not support the idea of an intricate association between functional nervous disorders and the ductless gland systems. In fact the indications would support the reverse of this idea.

PSYCHOSES

In previous military statistics "insanity" and "mental alienation" were used as terms to express a great variety of pathological behavior defects. Not only mental diseases, but the psychoneuroses, mental deficiency and in fact nearly all mental conditions, with the exception of epilepsy and inebriety, were embraced under these headings. The classification adopted herein permits a finer differentiation of the various conditions than was heretofore possible. Viewed in relation to the three phases of war time—the mobilization, the campaign, and the resulting readjustment and after care—the psychoses or mental diseases proved to be the most important condition in the neuropsychiatric group, so far as the Government is concerned.

These patients put heavy burdens on the hospitals and on personnel not only in the United States during mobilization but also in the American Expeditionary Forces; long delays were inevitable in effecting discharge, and most of the patients required one or more trained attendants to conduct them back to their homes. When insane soldiers were returned to the United States from overseas, policy demanded that they be retained in the military hospitals for a period of from four to six months, in order that a reasonable chance be afforded them to recover, and to avoid being sent to "lunatic asylums."

While third in order of frequency during the mobilization in the American Expeditionary Forces the psychoses took over first place in this respect; and after the war they constituted 70 per cent of all neuropsychiatric cases (March 1921). In addition, the Government had assumed a certain responsibility toward the whole Army with respect to ex-soldiers who might, as a result of military service, become insane. This liability deserves serious consideration in reference to future Government policy in these cases and should be considered in reference to what is known concerning the occurrence of insanity in general.

It is only recently that reliable statistics in relation to insanity in the United States have been available, and even to-day they are available for certain localities only. Many of the States make inadequate provision for the insane, and consequently are not in a position to collect statistics concerning them. New York is an exception. The hospitals of the State of New York are adequate in that all patients for whose admission application is made are received; and the New York State Hospital Commission has for years maintained an excellent statistical department. From its statistics certain important information has been gained as to the occurrence of insanity in civil populations, which are comparable to the population of New York. These may be made use of for the purpose of checking the numbers of insane which come to light as a result of the mobilization of troops, of home service, or of foreign service.

The New York statistics are compiled for quinquennial age groups from 20 to 70. There are practically no admissions before 20 years of age, and data are not separately compiled for the advanced age periods. The rate of admission is approximately 1 per 1,000 population each year. On the basis of data compiled from reports of the State hospitals, together with those of the 1910 census, it appears that approximately 1 in 25 males will become insane during the life period of the group. So heavy an incidence of mental disease will surprise many, and may lead to some reconstruction of popular ideas in relation to the effects of the World War in the production of mental disease.

The mobilization affected an age group of 20-30 years. There were discharged or rejected approximately 15,000^a cases of insanity in the 4,500,000 men examined, a ratio approximately of 3 per 1,000. This is, on the one hand, a smaller age group than produces the 1 per 1,000 yearly admissions in New York State hospitals; on the other hand, the time was one and one-half years and in addition included, in many States where the hospitals are inadequate, cases which, in localities where hospitals are adequate, would have been in State hospitals and so inaccessible to the draft. It may be surmised that the

^a This number is estimated from the most reliable sources available and is approximately correct.

incidence of insanity among mobilized troops did not greatly exceed the normal incidence of insanity throughout the country as a whole in the civil population. In other words, the Government, through the War Department, brought to light about the same amount of insanity as would have been brought to light had the various States been provided with proper facilities for identifying and caring for their insane.

To compare the incidence of insanity in the Army as finally formed, and especially in the American Expeditionary Forces, is more difficult, as there we are dealing with a selected group—a group from which many cases had been eliminated by the examinations at draft boards and at camps.

The total admissions to Base Hospital No. 214, A. E. F., for mental cases invalided home during approximately one and one-half years, was 2,694.² During the year 1918, when the mean annual strength of the American Expeditionary Forces was about 1,000,000, the admissions numbered 1,359, or 1.4 per 1,000 troops. It will be noted that this incidence is only 0.4 per thousand higher than the yearly admissions to the New York State hospitals. The group from which the incidence rate is made up was selected, in that many insane cases, but not all, had been eliminated from it in the United States, and it was a younger group as to years, in that it included the age period 20–35 only.

Previous observations as to the relations between war and insanity have left out of account the steady, yearly, and so far inevitable, production of mental disease in every population. When an identified mechanism like an army has unearthed these cases, the inference has been drawn that the army produced them. It would, of course, be absurd to maintain that change of environment, and especially the absence from home and friends such as is necessary to foreign service, did not cause mentally predisposed persons to break down. But the preceding statements make it plain also that much of the insanity which a war discloses is not caused by the war, but is merely a part of the psychological evolution of a people. If we profit by the lesson and make better provision for the insane, we will have fewer to deal with during war time.

This subject is also extremely important from the point of view of after-the-war compensation. There is certain to be a yearly development of mental cases in veterans for the next 30 years. In determining the responsibility of the Government for these cases, the amount of insanity that is “normal” every year for the community should be borne in mind.

CLINICAL CLASSIFICATION

Including the alcoholic psychoses, the distribution of the different forms of psychoses discovered in the Army during the World War was substantially the same as that found among admissions in the same age groups in civil hospitals.

In the distribution certain differences are to be noted as between the whites and the colored. (See Table 6.) The negroes presented a greater number of atypical and undiagnosed forms. They developed only five cases of alcoholic insanity, and a slightly higher percentage of insanity with mental deficiency than the whites. They were lower both in dementia præcox and manic-depressive psychoses and higher in epileptic psychoses.

METHODS OF DISCOVERING CASES

Relatively more negroes than whites were discovered immediately. (See Table 8.) A smaller percentage of psychoses were discovered at the routine neuropsychiatric examination than of any other clinical group. The delay in identification was due partly to the fact that continued observation is so often necessary for the recognition of mental disease, and partly because mental symptoms, dormant at the time of enlistment, are brought to the fore by the change in environment.

In the routine examinations neuropsychiatrists were obliged to rely chiefly on past history (previous commitments, etc.) and on the soldier's appearance and manner. Such patients came to attention of medical officers attached to organizations with especial frequency. Mental symptoms appeared while the patients were under treatment for some other condition, or they sought medical advice in the same way they got to civil hospitals, because they are depressed, thinking of suicide, feel that they are not being treated right, and similar ideas.

Commanding officers also were more instrumental in the identification of mental cases than of any other group except the constitutional psychopathic states. Absence without leave, strange attitudes and actions, inability to get along with others, and epileptic attacks were among the causes that brought these soldiers to the attention of their commanders.

One conspicuous conclusion derived from these particular statistics is that an observation period is essential for discovering mental cases. Such examinations as were held by draft boards can not hope fully to accomplish the object in view. More time, more extended facilities than are possible there are necessary, if the insane are to be kept out of the Army, or if the Government is to be saved from ranking with the disabled veterans men who were insane prior to entrance in the Army.

LENGTH OF SERVICE PRIOR TO DISCOVERY

The information available under this heading substantiates what was stated above in regard to the comparative delay in the appearance of psychoses in the military service.

As shown in Table 10, mental cases gave longer service than any other neuropsychiatric group, the negroes rendering a shorter service than the whites. This might be put in another way: A longer time was required for their detection than for the detection of other neuropsychiatric patients. Twenty-two and three-tenths per cent had not been detected before the expiration of six months training period, as compared to 9.4 per cent of the mental defectives. The insane were considerably above the average of the whole neuropsychiatric classification in respect to length of service. For example, 52.6 per cent of the whole group had been identified in less than one month, as compared with 36.7 per cent of the mental cases identified in the same period, and 86.7 per cent of the former had been identified before six months, as compared to 77.7 per cent of the latter. As regards extreme length of service (Volunteers), the mental cases were also the highest, with the exception of alcoholics.

The inferences which follow seem justifiable from the figures. In a relatively greater number of cases, breakdowns resulting from purely mental causes do not make themselves immediately apparent; although delayed, their appearance is none the less inevitable, inasmuch as the psychoses occupy third place in order of frequency in the whole neuropsychiatric classification. It would seem, therefore, that it was not the first shock of being dislocated from a civil to a military environment that brought the psychosis to notice, but rather the continued separation, the continued strain of service conditions, even though these latter are gone through with in the home area. In considering service as an aggravating cause of psychoses, it should not be left out of account that, even under civil conditions, in the age groups between 20 and 50 years, there is a regular occurrence of insanity of about one per thousand each year, and also that the greater bulk of the cases, as shown in the succeeding paragraph, gave a history of time of onset a year or more before entering the service.

TIME OF ONSET

In approximately one-half of the cases, the time of onset of the psychosis was determined. (See Table 11.) In these 3,512, or 87 per cent, the psychosis antedated entrance into the Army.

Table 11 shows that 3,063, or 87.3 per cent, of the cases of psychoses gave a history of development of more than one year prior to enlistment, a smaller percentage than any other neuropsychiatric group. This is in accord with former knowledge as to the nonappearance of psychoses in very young persons. Of the 712 cases in which the symptoms developed after entering the service, in only 92 was the onset immediate; i. e., two months or less after arrival at camps. It is evident that it is not the abrupt change from home surroundings to camps that precipitates the psychoses.

RECOMMENDATIONS FOR DISPOSITION

As between the whites and the negroes, there were only slight differences either as to the recommendations or dispositions of insane soldiers.

As a group, a higher percentage (91.4 per cent) of cases of psychoses were recommended for discharge than for any other clinical condition. (See Table 12.) A medium number of cases was recommended for treatment, but few for limited service and still fewer were returned to duty.^b

There were 39 deaths from psychoses distributed as follows:

	White	Colored		White	Colored
Senile.....	1		Manic-depressive.....	10	2
With cerebral arteriosclerosis.....	1		Dementia præcox.....	7	1
General paralysis.....	2				
Alcoholic.....	12			35	4
With other somatic diseases.....	2	1			

^b During demobilization, instructions were issued from the Surgeon General's Office to the effect that patients who had suffered from psychoses, and who had a record to that effect, even though they had made a clinical recovery, should none the less be discharged on surgeon's certificate of disability. This was intended to prevent the reenlistment of such a soldier in future years.

DELINQUENCY

The psychoses were second in the order of furnishing delinquency cases, although not entitled to second place by the actual size of the group. Of the total of 7,910 insane, 404, or 5.1 per cent, were referred for examination by reason of misconduct, the highest percentage in any group. This excess is partly explained by the nature of the mental disease itself.

FAMILY HISTORY

More than one-half of the cases of psychoses gave a history of family neuropathic taint of some kind (Tables 13 to 17), but they were exceeded in this respect by epilepsy, endocrinopathies, constitutional psychopathic states, and the psychoneuroses. In both white and colored the character of the taint was 28 per cent mental, others, in order, being nervous diseases, inebriety, and mental deficiency. The psychoses showed more mental disease in the family than any other clinical group.

AGE

With the exception of a somewhat higher percentage of white as compared to the colored in the younger age group, the information as to age in cases of psychoses has no particular significance. (See Table 20.)

EDUCATION

Excluding the mental defectives, the cases of psychoses, as a group, were below the general neuropsychiatric average in education as regards grades, but the percentage approached the average as regards high schools and, with the exception of constitutional psychopathic states, the psychoses had the highest percentage of attendance at college. The group average was lowered by the colored. For example, 32.5 of the colored had had no schooling at all, as compared with 7.2 per cent of the white, and the number of insane negroes who had been in college was very small. (See Table 23.)

ECONOMIC CONDITIONS

There were more cases in comfortable circumstances among the insane than among the mental defectives, constitutional psychopaths, epileptics, alcoholics, or drug addicts. Both white and colored were below the average as to marginal circumstances. (See Table 24.)

HISTORY OF VENEREAL DISEASE

Mental cases presented nothing worthy of special remark in reference to the history of venereal diseases that has not already been stated. (See Table 25.)

ALCOHOLIC HABITS

Insane soldiers gave a more frequent history of intemperance than the members of any other clinical group except alcoholics themselves. (See Table 26.) Also, a relatively small percentage of them were abstinent. Among drug

addicts alone was the percentage of abstinent persons lower. This evidence as to the relationship between intemperance and insanity is conditioned somewhat by the fact that the present classification includes 292 cases of alcoholic insanity. In the psychotic group the whites admitted a greater alcoholic indulgence than the colored.

MARITAL STATUS

Mental cases as a class were well below the neuropsychiatric average in respect to marriage, but still above that of Class I men. When the white and colored cases are contrasted it is seen that among the colored the single were relatively less frequent and the married relatively more frequent. (See Table 27.)

HOME ENVIRONMENT—URBAN OR RURAL

Mental cases are to be classed among those with a preference for the cities. (See Table 28.) Of the whole group, 59 per cent gave urban residence and 41 per cent rural. Among the colored these percentages as to urban and rural were reversed, owing to the higher percentage of rural residence among the general colored population.

STATE OF RESIDENCE (WITH GAIN OR LOSS THROUGH MIGRATION OR IMMIGRATION)

Twenty-four States exceeded the United States distribution average of 12.1 per cent for psychoses for the whites. (Tables 41 and 42.) It is not possible to determine the full significance of this excess, since, owing to differences in classifications, these statistics can not be compared with those of the local boards.

TABLE 41.—States of residence of cases of psychoses

State of residence	White		Colored		State of residence	White		Colored	
	Num-ber	Per-cent	Num-ber	Per-cent		Num-ber	Per-cent	Num-ber	Per-cent
Alabama.....	130	11.8	49	5.0	New Hampshire.....	14	10.2	-----	-----
Arizona.....	20	16.7	2	33.3	New Jersey.....	191	13.4	7	11.3
Arkansas.....	80	9.1	20	5.4	New Mexico.....	19	5.5	-----	-----
California.....	297	17.4	3	8.6	New York.....	746	11.6	11	6.8
Colorado.....	70	14.5	-----	-----	North Carolina.....	112	8.0	20	5.3
Connecticut.....	97	15.9	1	7.7	North Dakota.....	33	12.6	-----	-----
Delaware.....	11	12.0	2	5.0	Ohio.....	427	11.3	8	4.7
Florida.....	71	14.5	18	13.8	Oklahoma.....	141	11.8	3	1.8
Georgia.....	205	13.4	37	8.3	Oregon.....	60	19.7	-----	-----
Idaho.....	42	25.5	1	50.0	Pennsylvania.....	621	11.0	22	7.8
Illinois.....	516	13.8	16	11.0	Rhode Island.....	22	9.9	1	10.0
Indiana.....	157	8.8	5	11.6	South Carolina.....	51	7.0	34	6.2
Iowa.....	155	16.4	5	20.8	South Dakota.....	32	10.5	-----	-----
Kansas.....	95	10.4	2	3.9	Tennessee.....	127	9.6	25	3.6
Kentucky.....	130	6.9	8	4.6	Texas.....	285	17.6	43	12.6
Louisiana.....	87	9.1	46	6.7	Utah.....	28	18.5	-----	-----
Maine.....	30	7.7	-----	-----	Vermont.....	15	13.3	-----	-----
Maryland.....	92	10.4	21	4.9	Virginia.....	133	9.2	47	8.2
Massachusetts.....	224	14.4	1	4.8	Washington.....	78	17.7	-----	-----
Michigan.....	288	13.5	6	13.0	West Virginia.....	99	8.2	10	12.5
Minnesota.....	165	14.0	1	9.1	Wisconsin.....	170	12.6	-----	-----
Mississippi.....	85	9.8	47	6.4	Wyoming.....	10	8.7	-----	-----
Missouri.....	233	8.5	10	3.6	District of Columbia.....	32	19.9	7	7.7
Montana.....	56	20.8	-----	-----	State unascertained and others.....	454	-----	17	-----
Nebraska.....	77	15.5	-----	-----	United States.....	7,354	12.1	556	6.6
Nevada.....	11	18.3	-----	-----					

Percentages are based on total neuropsychiatric cases of each color from each State.

TABLE 42.—*Per cent distribution of neuropsychiatric conditions in 21 States in which the rate for psychoses exceeded the United States rate of 12.1 per cent*

State of residence	Psy- choses	Mental defect	Psycho- neuroses	Neuro- logical condi- tions	Epi- lepsy	Consti- tutional psycho- pathic states	Endo- crino- pathies	Drug addic- tion	Alco- holism
United States.....	12.1	29.2	17.0	10.0	8.6	9.7	7.4	3.0	3.0
Arizona.....	16.7	15.0	12.5	18.3	10.8	11.7	6.7	4.2	4.2
California.....	17.4	22.0	16.7	12.2	7.7	12.7	2.7	3.3	5.3
Colorado.....	14.5	24.8	18.2	10.7	11.8	9.5	6.4	2.1	2.1
Connecticut.....	15.9	26.7	17.8	7.7	10.6	10.3	3.1	2.9	4.9
Florida.....	14.5	31.1	18.4	9.2	11.2	8.8	3.5	2.9	.4
Georgia.....	13.4	33.3	13.0	11.5	7.9	11.8	6.1	2.5	.7
Idaho.....	25.5	26.7	10.3	8.5	7.9	6.7	14.6		
Illinois.....	13.8	19.9	20.6	10.7	8.3	9.1	9.8	1.5	6.2
Iowa.....	16.4	25.3	17.8	9.9	8.4	9.3	8.2	2.6	2.1
Massachusetts.....	14.4	25.7	18.1	6.9	10.4	12.2	1.7	2.7	7.9
Michigan.....	13.5	29.2	12.0	10.9	8.6	11.6	11.2	1.1	2.3
Minnesota.....	14.0	22.2	19.5	10.9	7.8	7.1	12.0	2.2	4.3
Montana.....	20.8	16.7	16.0	11.2	11.9	8.9	7.8	3.7	3.0
Nebraska.....	15.5	25.1	14.7	12.9	7.6	9.4	10.7	2.6	1.6
Nevada.....	18.3	18.3	11.7	18.3	8.3	6.7	1.7	1.7	15.0
New Jersey.....	13.4	27.6	16.6	6.8	12.6	11.2	5.7	3.0	3.2
North Dakota.....	12.6	38.5	14.1	9.2	8.0	10.3	3.8	.4	3.1
Oregon.....	19.7	18.1	19.1	8.9	9.5	16.4	5.3	2.6	.3
Texas.....	17.6	25.5	14.8	12.3	13.4	8.8	2.3	4.1	1.1
Utah.....	18.5	20.5	19.2	6.0	7.9	12.6	4.0	7.9	3.3
Vermont.....	13.3	33.6	16.8	10.6	8.8	10.6	3.5		2.7
Washington.....	17.7	26.1	14.1	8.2	7.5	9.5		6.8	.9
Wisconsin.....	12.6	27.0	19.2	11.6	6.8	6.2	12.6	.7	3.2
District of Columbia.....	19.9	16.1	23.6	14.3	6.2	8.7	6.2	2.5	2.5

NATIVITY

The psychoses cases had foreign-born percentage in 13.5 per cent of instances. This is above that of neuropsychiatric cases in general.

CORRELATIONS WITH OTHER CLINICAL CONDITIONS

When describing the correlations of mental deficiency it was shown that its distribution average tends to rise when that for the psychoses is below average.

Table 42, which tabulates 24 States in which the white insanity average exceeded the United States average of 12.1 per cent, affords an opportunity of noting the converse of this and also of noting the action of the conditions allied to insanity, viz, psychopathic states, alcoholism and drug addiction, in the States when the insanity average is in excess. This table shows that the converse holds true as far as mental defect is concerned, as the average for mental deficiency in these 24 States is 24.9 per cent, 4.3 per cent below the United States average for that condition. There were, however, four States, viz, Florida, Georgia, North Dakota, and Vermont, in which mental deficiency average surpassed the United States average of 29.2. The converse of the proposition did not hold true in relation to the other clinical conditions mentioned.

TABLE 43.—*Nine races in which the distribution rate for psychoses exceeded the United States white rate of 12.1 per cent*

Race	Number classified	Mental defi- ciency	Psycho- neuroses	Psycho- ses	Neuro- logical condi- tion	Epi- lepsy	Consti- tutional psycho- pathic states	Endo- crin- opathies	Drug addic- tion	Alco- holism
United States (white).....		29.2	17.0	12.1	10.0	8.6	9.7	7.4	3.0	3.0
Armenian.....	69	37.7	15.9	14.5	11.6	10.1	8.7	1.4	---	---
Dutch.....	328	26.2	14.9	13.1	11.6	10.4	10.1	10.4	1.5	1.8
German.....	4,351	28.0	17.5	12.7	9.6	7.4	10.0	10.9	1.6	2.4
Greek.....	281	23.8	24.9	13.9	8.9	13.5	8.2	5.3	.4	1.1
Hebrew.....	1,314	17.2	25.2	14.9	7.5	7.1	15.4	5.6	6.7	.5
Scandinavian.....	1,256	23.6	17.6	17.3	10.1	6.8	8.4	10.5	1.9	3.9
Scotch.....	579	12.4	18.3	12.3	16.6	9.3	10.7	10.4	4.7	5.4
Slavonic.....	2,474	37.0	15.3	14.5	7.3	6.6	10.0	5.7	1.2	2.5
Mixed.....	23,604	27.5	18.4	12.2	10.2	8.7	9.9	7.2	3.7	2.3

Of the classified races, eight presented an excess of distribution average of psychoses. (Table 43.) Of these all but one, the Slavonic, were below the United States average for mental defect; all but the Greek and Scandinavian showed an over average in constitutional psychopathic states; only the Scandinavian and Scotch showed an over average in alcoholism; the Hebrew, mixed, and Scotch were the only ones which showed an over average in drug addiction.

Of the foreign-born races (see Table 34) the Scandinavians, Irish, and Germans showed an over average for psychoses. Of these three, all showed an under average for mental defect, constitutional psychopathic states and drug addiction; two, the Scandinavian and Irish, an over average for alcohol.

NERVOUS DISEASES AND INJURIES

This group is made up of so many quite diverse clinical conditions that few generalizations concerning it are possible. When the syphilitic cases are excluded the other clinical conditions have little in common. The information of importance concerns the distribution of different diseases of the nervous system, organic for the most part, among a given age group of men. This information is to be found in Table 6.

CLINICAL CLASSIFICATION

Table 6 requires no further explanation in the present connection except in reference to the cases of the late effects of syphilis. To determine what these effects are, in men of the given age period, the cases of general paralysis, an unquestioned syphilitic disease, may be added to the syphilitic cases in the present group. The result is as follows:

General paralysis.....	530
Syphilis, central nervous system.....	2,462
Tabes dorsalis.....	333
Total.....	3,325

The number 3,325, which is 4.8 per cent of the total number of 69,394 cases, shows the relative position occupied by the late effects of syphilis of the central nervous system. If syphilis of the nervous system had been tabulated as a separate clinical group, it would have occupied eighth place, in order of frequency, in 10 clinical groups. The distribution of the syphilis of the central nervous system, of tabes, and of general paralysis among negroes was about the same as among whites. This is in apparent contradiction to the general opinion as to the immunity of the negro in relation to these diseases. Some immunity, however, he must possess, inasmuch as, with a so much higher rate of venereal infection in the negro, he does not exceed the whites in the later serious consequences of syphilis.

METHODS OF DISCOVERING CASES

Three thousand one hundred and forty-seven, or 47.2 per cent, of the cases were detected at the routine examinations and 2,324, or 34.9 per cent, by medical officers, as was natural in view of the objective symptoms presented by these cases. (See Table 8.) Relatively few were referred by courts-martial and psychologists.

LENGTH OF SERVICE PRIOR TO DISCOVERY

As shown in Table 10, these cases were identified with remarkable promptness.

RECOMMENDATIONS FOR DISPOSITION

Six thousand and twenty-three of the cases were recommended for discharge, the remainder being recommended for treatment, duty, or limited service. (See Table 12.) There were 33 deaths. After the war 3.3 per cent of the patients in hospitals of the Bureau of War Risk Insurance (March, 1921) were of this group.

DELINQUENCY

Of the 6,916 neurological cases, 19 were reported by reason of misconduct. Of these 19, 12 were found to be cases of cerebrospinal syphilis. One was a case of multiple sclerosis, mistaken perhaps for a malingerer.

HISTORY OF VENEREAL DISEASES

The inclusion of the effects of syphilis of the nervous system in this group makes the percentage of cases with a positive history of infection (43.4 per cent) higher than in any other group, except the drug-addiction group (Table 25).

CORRELATION WITH OTHER CLINICAL CONDITIONS

The correlation of diseases and injuries of the nervous system with other conditions gives little information of importance.

TABLE 44.—*Per cent distribution of neuropsychiatric conditions in 21 States in which the rate for epilepsy exceeded the United States rate of 8.6 per cent*

State of residence	Epilepsy	Mental deficiency	Psycho-neurosis	Psycho-sis	Neuro-logical conditions	Constitutional psychopathic states	Endo-crino-pathies	Drug addiction	Alcoholism
United States.....	8.6	29.2	17.0	12.1	10.0	9.7	7.4	3.0	3.0
Alabama.....	9.3	36.0	20.1	11.8	9.9	7.3	4.0	1.2	.5
Arizona.....	10.8	15.0	12.5	16.7	18.3	11.7	6.7	4.2	4.2
Colorado.....	11.8	24.8	18.2	14.5	10.7	9.5	6.4	2.1	2.1
Connecticut.....	10.6	26.7	17.8	15.9	7.7	10.3	3.1	2.9	4.9
Florida.....	11.2	31.1	18.4	14.5	9.2	8.8	3.5	2.9	.4
Kentucky.....	8.8	41.1	14.0	6.9	11.8	9.4	4.2	1.2	2.6
Louisiana.....	12.1	28.7	30.8	9.1	6.2	7.6	2.3	2.5	.6
Maine.....	9.2	51.5	13.0	7.7	5.4	8.9	.5	1.3	2.6
Massachusetts.....	10.4	26.7	18.1	14.4	6.9	12.2	1.7	2.7	7.9
Mississippi.....	10.9	35.4	23.2	9.8	8.3	6.7	2.1	3.1	.6
Montana.....	11.9	16.7	16.0	20.8	11.2	8.9	7.8	3.7	3.0
New Hampshire.....	10.2	27.7	23.4	10.2	7.3	12.4	1.5	2.9	4.4
New Jersey.....	12.6	27.6	16.6	13.4	6.8	11.2	5.7	3.0	3.2
New York.....	10.0	19.8	18.3	11.6	8.8	13.1	6.3	8.4	3.5
North Carolina.....	9.6	46.7	17.7	8.0	6.6	3.9	6.1	.7	.6
Oregon.....	9.5	18.1	19.1	19.7	8.9	16.4	5.3	2.6	.3
Rhode Island.....	.4	29.2	18.8	9.9	7.2	9.9	4.0	4.9	6.7
South Carolina.....	8.9	43.4	19.6	7.0	8.2	4.1	6.1	1.9	.8
Texas.....	13.4	25.5	14.8	17.6	12.3	8.8	2.3	4.1	1.1
Vermont.....	8.8	33.6	16.8	13.3	10.6	10.6	3.5	-----	2.7
Wyoming.....	8.7	21.7	24.3	8.7	11.3	9.6	5.2	2.6	7.8

EPILEPSY

The data in the annual reports of the Surgeon General for years prior to the World War indicate that epilepsy was the most important neuropsychiatric condition coming to the attention of recruiting officers. The present statistics indicate that four neuropsychiatric conditions are much more frequent and that epilepsy constitutes only 9.2 per cent of the problem. This fact, together with the almost uniform distribution throughout different communities and races, both foreign-born and native, constitutes the most important information furnished by the present inquiry as to this mysterious disease.

CLINICAL CLASSIFICATION

Of the 6,388 cases classified with respect to the different types of epilepsy, in 3,875, or 60.6 per cent, the information desired was not furnished by the examiners. (See Table 6.) Grand mal was put down as occurring in 2,093 cases, petit mal in 294, grand and petit mal in 31, and Jacksonian in 95.

METHOD OF DISCOVERING CASES

The epileptic group is one of the smallest in which cases were referred for examination by courts-martial and psychologists. (See Table 8.) With the exception of the psychoses, the epileptic group had the smallest percentage (1,963, or 31.7 per cent) found in the routine examinations by psychiatrists. The patriotism of epileptics was a matter of common remark, and they were inclined to conceal their defects. A somewhat larger proportion of negroes than of whites was found in the routine psychiatric examinations. Perhaps they were more frank than the whites. Epilepsy is a conduct disorder, in that it so often first comes to light by the attacks. Consequently, a relatively larger proportion of epileptics (1,660, or 26.8 per cent) was reported by commanding officers. This is also true for organization medical officers.

LENGTH OF SERVICE PRIOR TO DISCOVERY

Five thousand five hundred and eighty-nine cases, or 90.5 per cent of all cases, were discovered before the expiration of six months. (See Table 10.) In this respect epileptics gave briefer service than alcoholics, neurological cases, psychoses, and psychoneuroses, and about the same length of service as the others. The negroes were detected much sooner than the others, which confirms the difference between negroes and whites, as remarked in the preceding paragraph. There were relatively fewer epileptics who served more than one year, than alcoholics, neurological cases, and psychoses.

TIME OF ONSET

The epilepsy was of long standing, 4,417 cases, or 97.5 per cent of the ascertained cases, being of over 1 year duration, and 3,452 cases, or 76.2 per cent, being over 5 years duration. (See Table 11.) In this respect there are few differences between the whites and colored. Only 38 cases were reported as originating after entering the service.

RECOMMENDATIONS FOR DISPOSITION

Six thousand one hundred and seventy-nine cases, or 96.7 per cent, were recommended for discharge—a larger percentage than any other group. (See Table 12.) Only 209 cases out of the total were recommended for treatment, duty, or limited service.

There were 930 cases of epilepsy reported in the American Expeditionary Forces. It may be said in this connection that some of these cases reported from France during the war period were looked upon, after their arrival in this country, as not true epilepsies, but hysterical conditions. Five deaths from epilepsy were reported.

DELINQUENCY

Only 53 of a total of 6,388 cases of epilepsy were reported for examination to explain the cause of misconduct. It would thus seem that epileptic symptoms, for the most part, were recognized immediately for what they were.

FAMILY HISTORY

Epilepsy gave the highest ratio of neuropsychiatric family history (61.9 per cent), exceeding that of endocrines by 0.9 per cent. (See Tables 13 to 17.) In the family histories of epileptics, the existence of inebriety was comparatively low. It was higher among the colored than among the whites. From the limited number of epileptic cases analyzed, it appears that the history of nervous disease in family was the commonest form of neuropsychiatric taint. The percentage of positive cases is higher among negroes than among whites.

AGE

The present statistics add little to what already was known in reference to age of epileptics, with the exception that the whites averaged somewhat younger than the negroes. (See Table 16.) Like mental deficiency, epilepsy

had a relatively higher representation in the younger age groups and a relatively lower representation in the older age groups.

EDUCATION

In Table 23, it is shown how far below the average in education the epileptics are. They came second to mental defectives in respect to having no schooling at all and in representation in the grades.

ECONOMIC CONDITION

There was a somewhat higher proportion of epileptics in comfortable circumstances than mental defectives, alcoholics, or drug addicts—10.5 per cent as compared to 4.6 per cent, 7.8 per cent, and 9 per cent, respectively. (See Table 24.)

HISTORY OF VENEREAL DISEASES

One thousand six hundred and twenty-four cases, or 25.4 per cent of the epileptics, admitted having had venereal disease of some kind. (See Table 25.) The percentage was much higher among the colored. Four thousand three hundred and sixteen white epileptics, or 81.9 per cent of the white epileptics, denied having had any venereal disease, while 448 negro epileptics, or 40.2 per cent of the negroes, made such denial. One hundred and eighty-two white epileptics, or 3.5 per cent of white epileptics, admitted syphilis, while 819 white epileptics, or 15.5 per cent of white epileptics, admitted gonorrhea. Among the negro epileptics 273, or 24.5 per cent of them, admitted syphilis, and 557, or 50 per cent, admitted gonorrhea.

ALCOHOLIC HABITS

There is practically no difference between the white and colored epileptics in reference to alcoholic habits. (See Table 26.) Two thousand seven hundred and forty-six, or 46.1 per cent, declared themselves as abstainers, this being a considerably higher percentage of abstainers than was found among drug users, neurological cases, insane, and constitutional psychopathic states. In fact, abstainers were more common among epileptics than among any other group, except psychoneuroses (48.6 per cent) and the endocrine group (49.3 per cent). In other words, epileptics were third on the list of the different clinical groups found in order of abstinence and seventh on the list found in order of intemperance.

MARITAL STATUS

Of the draft registrants placed in Class I, 86.8 per cent were single. The epileptics ran below this, 75.8 per cent being single. (See Table 27.) There was a higher percentage of single men among alcoholics, psychoses, psychoneuroses, endocrine cases, mental defectives, and constitutional psychopathic states than among epileptics.

HOME ENVIRONMENT—URBAN OR RURAL

The distribution of epileptics as to home environment was about the same as that for the population as a whole.

STATE OF RESIDENCE (WITH GAIN OR LOSS FROM IMMIGRATION OR MIGRATION)

Table 44 shows 21 States in which the distribution rate for epilepsy exceeded the United States rate of 8.6 per cent. The distribution average in these 21 States was 10.6 per cent. Only four States exceeded 5.16 per 1,000 rate for epilepsy at the draft boards (see Table 5), showing a greater disagreement between the results at draft boards and camps than in other conditions.

CORRELATIONS WITH OTHER CLINICAL CONDITIONS

The variations in the distribution of epilepsy throughout both States and races are slight. In the 21 States in which the United States average of 8.6 per cent was exceeded the average excess was not remarkable, and the excess in individual States did not correspond with any excess or decrease in other clinical conditions worthy of special remark. (See Table 44.)

Among the classified races (see Table 34) epilepsy showed a high distribution rate in the Negro, Dutch, French, Greek, Italian, and Mexican; as between the foreign born and native born there were no marked differences. It seems as though this protean disease, epilepsy, were a condition inevitably and more or less evenly distributed throughout the whole human family, being little influenced in its distribution by race or environment.

CONSTITUTIONAL PSYCHOPATHIC STATES

This group is composed of young men who were unstable, undependable, ill-balanced emotionally, changeable, and in general asocial. Their asocial qualities were manifested in an inability to carry out the requirements of organization or in more definite antisocial acts. A considerable number had criminal records, and the tendency to recidivism, to do the same thing over again, whether the thing done was antisocial or not, was pronounced. These persons were for the most part fairly normal in respect to pure intellectual performance and presented few physical symptoms. They were recognized chiefly by their past records, which came to light either on the questioning the examiners put them to, on arrival at camp, or when they were referred for examination for some infraction of discipline. As so many of them were normals, absence without official leave was a common complaint brought against them.

The difference between psychopaths and psychoneurotics was distinct. The former never came under attention in the Army service because of their own choosing; that is, they did not come to the doctor suffering from symptoms, as did the psychoneurotics. They came as delinquents, disciplinary cases, conduct disorders, and inefficiency, because they were referred by company commanders or by the military police. They made no complaints themselves as to their own condition; in fact, they did not think that there was anything wrong with them. The psychoneurotics, on the other hand, were quite con-

vinced that there was something wrong with them. The psychopaths did not seek treatment but had treatment forced upon them. The psychoneurotics turned their fears, inefficiency, and inferiority into hysteria, neurasthenia, and anxiety. With the constitutional psychopaths the defects were on a little higher plane, being defects of character, in sense of responsibility and in ability to work in harmony with others. It was a less simple type of inferiority, on a higher intellectual level, and characteristic of a more intelligent group of men. In other words, the constitutional psychopaths represented the fundamental defect of character and development of moral and ethical standards as generally accepted and the psychoneurotics broke at a lower level, often associated with actual physical disability, such as stooping posture, prominent abdomen, flat feet, a tendency to flushing, sweating, and all those physical symptoms indicative of a poor physical constitution as well as poor mental endowment.

It was a fortunate thing for the Army that so many of these cases were recognized and discharged in the early part of the war. Their elimination accounts, in large measure, for the low delinquency rate among our troops.

CLINICAL CLASSIFICATION

The classification of constitutional psychopaths, as is shown in Table 6, is beset with great difficulties, if it is not an impossible task. Sexual psychopaths, especially homosexuals, constitute a more or less typical group, but to attempt to differentiate statistically between criminalism, nomadism, inadequate personality, etc., could be done only in a very intense inquiry. So the grouping as given in Table 6 is only to show how this great and important group tends to subdivide itself. It may be noted that there is little difference between the whites and the colored, with the exception that the colored show a higher percentage of sexual psychopathy than the whites. This condition, sexual psychopathy, including homosexuals, seems represented by a very small number, 190 cases in all.

METHOD OF DISCOVERING CASES

The social history of changing occupations, criminal records, unsuccessful meeting of life previously, made the prompt identification of these cases comparatively easy, and 41.8 per cent of them were found at the routine examinations. The delinquent tendencies common to this group explain why more cases were reported by commanding officers (31.8 per cent) and as a result of delinquency (1.1 per cent) than in other groups. (See Table 8.)

LENGTH OF SERVICE PRIOR TO DISCOVERY

Table 10 gives the length of service of these cases. It will be noted that the colored were identified much more promptly than the whites.

TIME OF ONSET

Table 11 shows the essentially constitutional character, as opposed to being created by environment, of these cases.

RECOMMENDATIONS FOR DISPOSITION

Practically the same proportion of constitutional psychopaths as of the psychoses were recommended for discharge, and a relatively high percentage were recommended for limited service. (See Table 12.) Low percentages were recommended either for treatment or for duty. Six deaths were recorded. As between the whites and the colored, a slightly higher percentage of colored were recommended for discharge and were discharged; as an exception to the general rule, a slightly higher percentage of whites were recommended for limited service than of colored. After the war these cases disappeared as such, for few mentions of them were found in March, 1921, as patients in the hospitals of the Bureau of War Risk Insurance. It seems probable that, as soon as the opportunity offered, they resumed the life of change and nomadism that the mobilization had interrupted. The evident criminal tendencies of the group lend some support to the supposition that these are the persons who add to the criminalism which so often follows wars.

DELINQUENCY

Among those reported for delinquency, 272, or 18.2 per cent, were constitutional psychopaths. In relation to the total number of constitutional psychopaths, this was a percentage of 4.5 per cent, the largest of any one group except the psychoses.

FAMILY HISTORY

With the exception of endocrine cases and epilepsy, constitutional psychopathic states gave a higher percentage of neuropathic heredity than any other group. (See Tables 13 to 17.) This percentage was considerably higher in the colored than in the white. Nervous diseases were relatively more frequent in the family in these cases than other conditions mentioned.

AGE

The constitutional psychopaths formed essentially a young group. (See Table 20.) A higher percentage of them were under 20 than any other group and only 2,556, or 41.8 per cent, of them were between 20 and 24 years, as compared with 62 per cent of Class I men in that age group; while 2,050, or 33.6 per cent, were between the ages of 25 and 29 years, as compared with 38 per cent of Class I men in that group. Negroes were somewhat older than the whites. (See Table 21.)

EDUCATION

The superior mental qualifications of constitutional psychopaths is shown by the statistics on education or schooling. (See Table 23.) They ranked above the average soldier as to college education. They were slightly below as regards high school and grades, though many more were without education. As far as other neuropsychiatric cases were concerned, the constitutional psychopaths seem to have been better educated than any except, perhaps, alcoholics.

ECONOMIC CONDITION

In this respect the constitutional psychopaths occupied about the median among neuropsychiatric cases. (See Table 24.)

HISTORY OF VENEREAL DISEASES

As in other clinical groups the negro greatly exceeded the white in the percentages of positive history of venereal diseases. (See Table 25.) As a group the constitutional psychopaths occupied about the median among neuropsychiatric cases.

ALCHOLIC HABITS

These cases ranked fourth in order of intemperance (Table 26), with practically no difference between the white and the colored.

MARITAL STATUS

Like mental defectives, constitutional psychopaths showed a relatively small number of married men and a larger number of single men. (See Table 27.) The youth of these patients should be remembered in this connection. They were much more frequently divorced than the defectives. The colored constitutional psychopaths showed a higher proportion of married and a smaller proportion of divorced than the whites. As a group, 83.3 per cent were unmarried, as compared to 86.8 per cent of Class I men.

HOME ENVIRONMENT—URBAN OR RURAL

After the two other antisocial groups, alcoholism and drug addiction, the constitutional psychopathic group stood third in reference to proportion from urban environment, the percentage being 63.6 per cent. (See Table 28.)

STATE OF RESIDENCE (WITH GAIN OR LOSS FROM IMMIGRATION OR MIGRATION)

Eighteen States (Table 45) exceeded the United States distribution average of 9.7 per cent for constitutional psychopaths. At draft boards, 12 States (Table 5) exceeded the United States rate for draft boards, of 0.15 per 1,000 men examined. In so vague a condition as constitutional psychopathic states, an absolute agreement in the results obtained by two different sets of examiners is hardly to be looked for. Nevertheless of the 13 States which equaled or exceeded the average rate at draft boards, nine—California, Maryland, Michigan, New Hampshire, New York, Pennsylvania, Rhode Island, Utah, and Vermont—exceeded in the neuropsychiatric examinations in the camps.

CORRELATIONS WITH OTHER CLINICAL CONDITIONS

Eighteen States (Table 45) exceeded the United States distribution average for this condition. The excess of the average was 2.2 per cent. In these States the only averages of the other clinical conditions to show changes worthy of note were mental deficiency and endocrine disturbances. These both fell below.

In the classified races (Table 34) the only significant changes referred to the Negro and the Mexican. These two races are conspicuous by low averages in the constitutional psychopathic group. In reference to the foreign-born as opposed to the native (Table 33) both the German and Irish foreign-born show a lower percentage of psychopaths than the native.

TABLE 45.—*Per cent distribution of neuropsychiatric conditions in 18 States in which the rate for constitutional psychopathic states exceeded the United States rate of 9.7 per cent*

State of residence	Constitutional psychopathic states	Mental deficiency	Psychoneuroses	Psychoses	Neurological condition	Epilepsy	Endocrinopathies	Drug addiction	Alcoholism
United States.....	9.7	29.2	17.0	12.1	10.0	8.6	7.4	3.0	3.0
Arizona.....	11.7	15.0	12.5	16.7	18.3	10.8	6.7	4.2	4.2
California.....	12.7	22.0	16.7	17.4	12.2	7.7	2.7	3.3	5.3
Connecticut.....	10.3	26.7	17.8	15.9	7.7	10.6	3.1	2.9	4.9
Georgia.....	11.8	35.3	13.0	13.4	11.5	7.9	6.1	2.5	.7
Indiana.....	14.5	25.3	20.0	8.6	14.3	7.5	8.3	.6	2.8
Kansas.....	9.8	21.6	18.2	10.4	13.5	6.3	15.4	2.5	2.2
Maryland.....	10.7	44.9	13.5	10.4	7.6	4.5	4.4	1.6	2.5
Massachusetts.....	12.2	25.7	18.1	14.4	6.9	10.4	1.7	2.7	7.9
Michigan.....	11.6	29.2	12.0	13.5	10.9	8.6	11.2	1.1	2.3
New Hampshire.....	12.4	27.7	23.4	10.2	7.3	10.2	1.5	2.9	4.4
New Jersey.....	11.2	27.6	16.6	13.4	6.8	12.6	5.7	3.0	3.2
New York.....	13.1	19.8	18.3	11.6	8.8	10.0	6.3	8.4	3.5
North Dakota.....	10.3	38.5	14.1	12.6	9.2	8.0	3.8	.4	3.1
Oregon.....	16.4	18.1	19.1	19.7	8.9	9.5	5.3	2.6	.3
Pennsylvania.....	12.0	27.0	15.3	11.0	9.3	7.6	9.9	2.8	5.2
Rhode Island.....	9.9	29.2	18.8	9.9	7.2	9.4	4.0	4.9	6.7
Utah.....	12.6	20.5	19.2	18.5	6.0	7.9	4.0	7.9	3.3
Vermont.....	10.6	33.6	16.8	13.3	10.6	8.8	3.5	-----	2.7

ENDOCRINOPATHIES

The present statistics furnish only a partial record of the endocrinopathies identified during the mobilization, for the reason that only a portion of these cases came under the special observation of neuropsychiatrists. Many of the cases, it is not known how many, were regarded as medical and were disposed of as such. For this reason the present statistics give only a partial idea of the extent of this problem, especially in the central (lake) and northwest regions of the United States. The importance of the nervous aspects of these troubles, however, is shown by the fact that so many were referred to neuropsychiatrists, and also by the frequency with which a neurotic family history was given.

CLASSIFICATION

Of the 4,805 cases of endocrinopathies, 4,501, or 93.7 per cent, concerned the thyroid gland primarily, and 205, or 4.3 per cent, concerned the pituitary gland. (See Table 6.) As between the whites and the negroes, the whites had a higher percentage of thyroid involvement, and the negroes a higher percentage of neurocirculatory asthenia.

In view of the classification as given above it seems probable that only the outspoken cases were included in this group. Examiners may have missed some of the less conspicuous evidences of endocrine troubles either classifying them under some more evident disability or passing over the symptoms altogether.

METHODS OF DISCOVERING CASES

As shown in Table 8, two-thirds of the endocrinopathies were discovered at the routine examinations—the largest percentage thus discovered in any clinical group. They were medical rather than behavioristic, and with the exception of cases of alcoholism, a smaller percentage of these cases than of any others were referred by commanding officers.

LENGTH OF SERVICE PRIOR TO DISCOVERY

The nature of the condition rendered the time required for identification short; 92.5 per cent had been identified before the expiration of six months; 97.2 per cent of the colored had been identified in that space of time. (Table 10.)

TIME OF ONSET

The endocrinopathies were among the cases of longest standing; 97.7 per cent had existed for from one to five years or over before entering the service. (See Table 11.) The percentages were practically the same for both white and colored. Only 28 cases developed after entering the service, and of these 12 developed during the first six months.

RECOMMENDATIONS FOR DISPOSITION

As endocrinopathies so frequently create a partial rather than a complete disability, the percentage of them, 87.3, recommended for discharge, was smaller than that for many other conditions. (See Table 12.) Eleven and nine-tenths per cent were recommended for limited service. Two deaths were recorded.

As between the whites and the colored a slightly higher percentage of the latter were recommended for discharge and a slightly smaller percentage of them were recommended for limited service.

DELINQUENCY

Only 6 cases out of the 4,805 in the endocrine group were reported for examination by reason of misconduct.

FAMILY HISTORY

Although not generally classified with nervous diseases, the endocrinopathies gave a high percentage (61.0 per cent) of neuropsychiatric taint in the family, being exceeded in this respect by epilepsy alone. (See Tables 13 to 17.) The colored gave a somewhat higher percentage than the whites.

Of the neuropsychiatric conditions in the family, the order as to frequency was nervous diseases, inebriety, mental diseases, mental deficiency. The percentage of mental diseases, in the families of endocrinopaths was lower than the average for the other groups.

AGE

The bulk of these cases, both white and colored, were in the age group of the draft. They had a relatively small representation under 20 years and over 30 years. (See Table 20.) It seems probable on the one hand that they did not volunteer, and on the other, that they could not stand the strain of service. (See Table 21.)

EDUCATION

The white endocrine cases were somewhat below the average white soldier in relation to school and college attendance but above the average of neuropsychiatric cases. (See Tables 22 and 23.)

ECONOMIC CONDITION

After the psychoneuroses and neurological conditions the endocrinopathies made the best showing in regard to economic conditions, 15.6 per cent of them being in comfortable circumstances. (See Table 24.) This relatively favorable showing was due to the whites.

HISTORY OF VENEREAL DISEASES

Table 25 shows the endocrinopathies to have the smallest number of histories of venereal diseases. Of the whites, 2.9 per cent admitted having had syphilis, and 13.1 per cent gonorrhea. The colored percentages were much higher.

ALCOHOLIC HABITS

The percentage of intemperate men among the endocrinopathies (5.1 per cent) was lower than for any other group, and they furnished the highest percentage (49.3 per cent) of abstinent men. The colored had higher percentages as to intemperance and moderate drinking, and a low percentage in relation to total abstinence. (See Table 26.)

MARITAL STATUS

Eighty per cent of these cases were single, which was above the average for neuropsychiatric cases. (See Table 27.) The endocrinopaths had the lowest percentage of divorces.

HOME ENVIRONMENT—URBAN OR RURAL

Somewhat less than one-half of these cases, 44.4 per cent, lived in rural surroundings, a fact which will appear again in the paragraph on State of residence. (See Table 28.)

STATE OF RESIDENCE (WITH GAIN OR LOSS THROUGH IMMIGRATION OR MIGRATION)

Seventeen States (Table 46) exceeded the United States distribution average of 7.4 per cent for endocrinopathies, the distribution average in these States being 11.4 per cent. These States are chiefly those in the central and north-

west part of the United States. The Gulf States were remarkably free. (See Table 29.) For example, the average distribution in Florida, Alabama, Mississippi, Louisiana, and Texas was 2.7 per cent as compared with 11.4 per cent in the 17 States which exceeded the United States average. If endocrinopathy, as used herein, corresponds with the classification of "goiter" and "exophthalmic goiter" as employed by local boards, there is substantial agreement in the results found by draft boards and by the neuropsychiatric examiners at camps.

TABLE 46.—*Per cent distribution of neuropsychiatric conditions in 17 States in which the rate for endocrinopathies exceeded the United States rate of 7.4 per cent*

State of residence	Endo- crinop- athies	Mental defi- ciency	Psycho- neuroses	Psy- choses	Neuro- logical condi- tions	Epilepsy	Consti- tutional psycho- pathic States	Drug addic- tion	Alco- holism
United States.....	7.4	29.2	17.0	12.1	10.0	8.6	9.7	3.0	3.0
Idaho.....	14.6	26.7	10.3	25.5	8.5	7.9	6.7	.....	6.2
Illinois.....	9.8	19.9	20.6	13.8	10.7	8.3	9.1	1.5	2.8
Indiana.....	8.3	23.3	20.0	8.8	14.3	7.5	14.5	.6	2.1
Iowa.....	8.2	25.3	17.8	16.4	9.9	8.4	9.3	2.6	2.2
Kansas.....	15.4	21.6	18.2	10.4	13.5	6.3	9.8	2.5	2.3
Michigan.....	11.2	29.2	12.0	13.5	10.9	8.6	11.6	1.1	4.3
Minnesota.....	12.0	22.2	19.5	14.0	10.9	7.8	7.1	2.2	3.3
Missouri.....	8.5	33.8	15.9	8.5	11.4	6.3	9.4	3.0	3.0
Montana.....	7.8	16.7	16.0	20.8	11.2	11.9	8.9	3.7	1.6
Nebraska.....	10.7	25.1	14.7	15.5	12.9	7.6	9.4	2.6	2.3
Ohio.....	12.8	23.9	19.7	11.3	10.9	7.7	8.6	2.7	5.2
Pennsylvania.....	9.9	27.0	15.3	1.0	9.3	7.6	12.0	2.8	2.3
South Dakota.....	16.1	33.1	14.4	10.5	12.8	6.6	3.9	.3	1.0
Virginia.....	10.9	45.5	12.1	9.2	7.0	5.8	7.4	1.2	.9
Washington.....	9.3	26.1	14.1	17.7	8.2	7.5	9.5	6.8	.7
West Virginia.....	15.7	38.6	12.6	8.2	9.1	6.3	7.8	1.1	3.2
Wisconsin.....	12.6	27.0	19.2	12.6	11.6	6.8	6.2	.7	

CORRELATIONS WITH OTHER CLINICAL CONDITIONS

Seventeen States (Table 46) exceeded the United States distribution rate for endocrinopathies of 7.4, the average distribution percentage in these States being 11.4 per cent. The distribution average in these 17 States for the different clinical conditions showed no marked variations, mental deficiency, alcoholism and drug addiction fell further below the United States average than the others. The United States endocrine average was especially exceeded in the North and Northwest. In most of these States the distribution average for alcohol and drugs was well below the United States average for these two conditions.

Of the classified races (Table 34) five, namely, the Dutch, English, German, Scandinavian, and Scotch, were all much over average in relation to endocrine troubles. These races showed an under average in mental defect, except the English, whose rate just equaled the United States average for mental defect.

As between native and foreign born, the foreign born German, Scandinavian, and Irish have a lower distribution average than the native; with the Italians the reverse is the case. (See Table 33.)

DRUG ADDICTION

By a drug addict is understood one who has become so habituated to habit-forming drugs—chiefly derivatives of opium—that when suddenly deprived of them he falls ill with painful symptoms and can not work. This falling ill and inability to work is essential to the definition of drug addiction. Many, if

not most, of the habitués, as long as they are supplied with what they have become dependent on, can work and keep in fairly good health. But they go to pieces shortly after withdrawal. It is in this way that the diagnosis of drug addiction is chiefly made—not by direct examination, but by the so-called withdrawal symptoms.

The drug addict has always been unpopular with the Army. He can not by any chance make a reliable soldier unless cured of this habit, and the Army has no facilities for curing him, for cure means not only hospital treatment during the period of withdrawal, but a long time of vigilant watching afterward. Most drug users are proselytors, eager to make others acquire the habit that enslaves them, and so in any community, and especially in a military community, they create a focus which fosters bad morale and disobedience. Before the World War our Army refused to accept applicants for enlistment who were drug addicts. But it could take no such attitude under a draft act because of the danger of drug-taking being feigned as a means to exemption; and also because, if physically sound drug addicts ran into the thousands—no one knew how many there would be—to have rejected all of them would have entailed too great a loss of man power. So, from the beginning, drug addicts were not accepted, but were rejected conditionally, so that if the numbers of them proved sufficient to justify it, they could be recalled.⁶

As a class drug addicts were not conspicuous as malingerers. Some recruits brought syringes, etc., with them, and others had punctured their skin for the purpose of giving the impression of being old "needle fiends." But most of these were malingerers pure and simple, and not drug addicts at all. And the number was small. The unbridled stories circulated in the newspapers in the early days, that many young men were acquiring the habit for the purpose of evading the draft, were entirely baseless. According to the total draft figures, drug addiction occurred in 0.54 men per 1,000 examined.

METHODS OF DISCOVERING CASES

By direct examination alone the only positive reliable evidence of habit are scars and abscesses from needle punctures. Failing to find these the most skillful physician can not be sure that addiction exists from any objective examination. In consequence, drug addiction belongs to the class of conduct disorders—the blight becomes evident more from the way the patient behaves than from medical examination. It appears from Table 8 that considerably less than half of the cases were identified by the psychiatrists in routine examinations. This is explained, partly, by the fact that routine examinations did not disclose the condition, and partly because the addict brought to camp with him a sufficient supply of heroin or morphine, or whatever he took, and could carry on for a time. More cases of alcoholism, neurological and endocrine disorders, and constitutional psychopathic states were found out at the start than of drug addiction. Other medical officers, on the contrary, discovered them frequently when they reported to hospital for treatment of symptoms of withdrawal or for independent disorders. Commanding officers also found them frequently. Drug addicts concerned psychologists but little, and few also came to light through the courts-martial or guardhouses.

LENGTH OF SERVICE PRIOR TO DISCOVERY

The drug addicts gave the shortest service prior to discovery—84.9 per cent of them were detected before the expiration of three months, and only 3.8 per cent served more than a year. (See Table 10.) This prompt identification may be explained in part, at least, by the fact that these soldiers could not get drugs in the cantonments and so were forced to disclose themselves. Police regulations for the suppression of the traffic seem to have been effective.

TIME OF ONSET

Not all those who tamper with drugs acquire the habit, even when the tampering occurs in the social ways by which drug addiction is most established. Many persons try drug taking, do not like it, and give it up after a short time. Some months are required for the habit to become fixed. But within that time the habit usually does become fixed and the fact that no cases developed in the service indicates definitely that there was not great prevalence of drug taking among troops. Ninety-eight and eight-tenths per cent of the drug addicts (Table 11) had been such for a year or more before they were mobilized. This is in full accord with what was known previously, namely, that the drug habit is a long-standing affair, meriting, on account of its very chronicity, being classed with the other degenerative neurotic conditions. The long establishment of the habit in the cases reported, furnishes additional proof that practically no habits were formed for the purpose of evading the draft.

RECOMMENDATIONS FOR DISPOSITION

Of the drug addicts discovered 90.2 per cent were recommended for discharge. (See Table 12.) This percentage was higher for the colored than for the white. One death was reported.

The almost complete eradication of drug habitués from our troops is shown by the fact that hospital admissions in the American Expeditionary Forces for this cause numbered but 70 for the years 1917-18-19.

DELINQUENCY

Only 21 cases of drug addiction were reported for examination as to misconduct. This is approximately 1 per cent of the total 2,020 drug addicts.

FAMILY HISTORY

As a class, drug addicts, both colored and white, were among the more intelligent of the neuropsychiatric cases, and their answers to questions as antecedents have, therefore, a fair chance of being correct. (See Tables 13 to 17.) Among them, the distribution of family neuropathic taint was about the same as among alcoholics. It was notably less than in endocrine disturbances and epilepsy. From this it seems evident that while many drug addicts are neurotically predisposed individuals, they, with alcoholics, are less so than the other members of the neurotically degenerate group.

Table 47 gives specific information as to which of four specified conditions had existed most frequently in the families of 907 drug addicts. The importance of the direct inheritance of tendency to inebriety is shown by the percentage 24 of history of family inebriety. A similar condition exists among alcoholics (33.3 per cent) and drug addicts share with alcoholics the lowest percentage of mental disease in the family, of all neuropsychiatric cases. But even then it is found in approximately 10 per cent of all cases. It will be observed that the history of mental disease in the family is much more frequent among negro drug addicts than among whites. Family history of mental deficiency, 2 per cent, is higher than in alcoholism, psychoneuroses, or constitutional psychopathic states. Table 48 shows a relative excess of inebriety in fathers.

TABLE 47.—*Family history of neuropathic taints among cases of drug addiction*

Neuropathic taint in family	Total		White		Colored	
	Number	Per cent ^a	Number	Per cent ^a	Number	Per cent ^a
Nervous disease.....	266	14.9	239	14.8	27	15.6
Mental disease.....	177	10.0	149	9.2	28	16.2
Inebriety.....	429	24.0	382	23.7	47	27.2
Mental deficiency.....	35	2.0	33	2.0	2	1.2
Total taints.....	907	50.7	803	49.7	104	60.1

^a Percentages are based on the number of cases with each specified taint among the total cases with ascertained family history.

TABLE 48.—*Classification of family neuropathic taints among cases of drug addiction according to disorder and relatives*

WHITE

Neuropathic taint in family	Number of cases	Number of relatives				
		Father	Mother	Grand-parents	Siblings ^a	Collaterals ^b
Nervous disease.....	239	53	106	7	99	25
Mental disease.....	149	26	29	15	45	87
Inebriety.....	382	247	22	13	134	96
Mental deficiency.....	33	7	8	-----	24	9
Total.....	803	333	165	35	302	217

COLORED

Nervous disease.....	27	2	16	1	7	2
Mental disease.....	28	4	4	4	3	13
Inebriety.....	47	24	3	1	20	11
Mental deficiency.....	2	-----	-----	-----	2	-----
Total.....	104	30	23	6	32	26
Total white and colored.....	907	363	188	41	334	243

^a Siblings include brothers and sisters.

^b Collaterals include uncles, aunts, and cousins.

AGE

The two groups, drug addiction and alcoholism, contain the smallest number of individuals under 20 years of age of any of the neuropsychiatric conditions. (See Table 20.) In contrast to alcoholism, the greatest number,

83.2 per cent, of drug addicts were found in the age period of 20 to 30, although negroes averaged somewhat older. Thus, while averaging older than the ages of Class I men, they were much younger than alcoholics. As a disability, drug addiction is established much more rapidly than alcoholism. They are primarily youngsters who congregate together evolving, meanwhile, a special vocabulary of their own, especially necessary since the enactment of laws limiting the use of drugs. The vendor must know the gangs' members. The members of these gangs are almost invariably young men. In the round-ups of addicts which take place from time to time only here and there will be observed anyone more than 30 or 35 years of age. The others are of about the same age as those found in the Army.

The fact that drug addicts are so rarely met with after 35 years of age raises an interesting question as to prognosis. What becomes of them? If the current belief that drug addicts are incurable, that they never break the habit, is correct, the only alternative explanation is that they all die. But this explanation is not correct, because there has never been a high mortality among drug addicts. It must be, therefore, that drug addicts, as they grow older, either do break the habit, or else get adjusted to small doses such as it is possible for them to obtain easily, and so keep out of trouble. In either event, it would seem that in their maturer years persons who have taken drugs cease to be much of a burden either to themselves or the community.

EDUCATION

The information as to this point bears testimony to the comparatively high mental development of drug addicts. (See Table 23.) There were fewer drug addicts (4.2 per cent) without any education at all than in the other groups, and the percentage of those who reached the grades is higher for all other conditions except alcoholism. Few drug addicts, however, reached high school, and a very small percentage, indeed, got to college. This rather abrupt breaking off of the education of drug addicts who were so well represented in the grades, may find some explanation in the succeeding paragraph.

ECONOMIC CONDITION

Drug addicts (91 per cent), alcoholics (92.2 per cent), and mental defectives (95.4 per cent) were in poorer circumstances than representatives from the other neuropsychiatric groups. (See Table 24.) Mental defectives are in poor circumstances because they not only are unable to earn much themselves, but also because one or both parents are so frequently inferior in wage-earning ability. The same facts may hold true for both drug addiction and alcoholism, although in the latter the habits alone are sufficient to account for the indigence.

More drug addicts were in comfortable circumstances (9 per cent) than alcoholics (7.8 per cent) or defectives (4.6 per cent). All the other neuropsychiatric groups presented a higher percentage in comfortable circumstances than these three. It would seem that economic condition is to be held to account, to a certain degree at least, for the sudden cessation of education on the part of drug addicts. Economic conditions force them to forego high school and college.

VENEREAL DISEASES

Among drug addicts venereal disease prior to entering the service was more frequent than in any other neuropsychiatric conditions—56 per cent as compared to 38.8 for alcoholism and 18.5 per cent for endocrine disturbances. (See Table 25.) Among the colored cases the percentage was even higher. Twenty-three per cent of all drug cases admitted syphilis. This is higher than in any other group except in the nervous disease group, in which syphilis is included. The history of gonorrheal infection (47.5 per cent) was the highest of all in drug addicts.

This frequency of venereal disease among drug addicts brings up an important consideration as to the action of drugs in the spread of venereal disease. Alcoholic intemperance has always been put down as the chief extraneous factor in the spread of venereal disease. Of course alcoholic intemperance is more widely disseminated throughout the community, and occupies a more especially important position in relation to the spread of venereal disease than drug taking, but as an actual incitant of behavior which results in venereal infection, alcohol seems materially less active than habit-forming drugs.

ALCOHOLIC HABITS

With the exception of alcoholism, relatively fewer drug addicts were abstainers than were found in any other neuropsychiatric group. (See Table 26.) With the exception of the neurological and mental deficiency groups there were proportionately more moderate drinkers among the drug addicts (48.9 per cent). After the alcoholism and the psychoses, they gave the most frequent history of intemperance.

MARITAL STATUS

The endocrine, mental defective, psychoses and constitutional psychopathic groups contain substantially more single men than the others. (See Table 27.) In the remaining group the proportion of single men was about the same throughout. Exceptions to this must be made in the case of the colored drug addicts who had more married men and fewer divorcees. In this connection, however, it should be remembered that the colored drug addicts averaged older than the whites. The married drug addicts did not seem to get along very well domestically, as the divorcees among them were more frequent than among any group except the alcoholic and the nervous disease groups.

HOME ENVIRONMENT—URBAN OR RURAL

Table 28 shows that 91.4 per cent of the drug addicts come from cities having over 2,500 inhabitants. Among negroes the percentage was 95.4 per cent, as compared with 36 per cent of colored neuropsychiatric cases as a whole, and 27 per cent of the colored population as a whole. Drug addiction is the urban variety of neuropsychiatric disorder par excellence, being followed by alcoholism (82.8 per cent), constitutional psychopathic states (63.6 per cent), and nervous diseases (62.1 per cent). This overwhelming preponderance of narcotic drug habits among city dwellers suggests several interesting observations. One of them is the folly of estimating the number of drug addicts in the country as a whole from the numbers found in cities. In the past it has been

inferred that in New York, for example, where drug addicts are registered in accordance with the State law, the distribution rate in New York might be made to apply for some State, such as Kansas, which has no very large cities.

Another inference concerns control. Inasmuch as drug addiction is essentially an affair of large municipalities, its local control, in addition to Federal, should be placed in the hands of municipal authorities. The problem of suppressing it is local, and is essentially a municipal and not a State problem. This point will come out plainly when the different localities are compared, as then it will appear that cities in some sections of the country have a much higher distribution of drug addiction than others.

Another inference to be drawn from Table 28 is that drug addiction is essentially a matter of social custom. It is well known that some drug addicts acquire the habit after the administration of morphine or other pain-relieving drugs by physicians. The drugs have been given after surgical operations or during the course of painful diseases. The physician either has been careless in not stopping the medicine soon enough, or the patient has continued the use of the drug without the physician's knowledge, or in spite of it. But such a mode of origin of drug addiction comprises only a small proportion of the cases. This is known to be so from analyses of the histories of individual drug addicts, and would seem to be proven by the great preponderance of drug addiction in cities as compared to rural districts. If maladministration of drugs by physicians was a common cause of the habit, we would expect to find the same rate of it in country as in city communities, as country doctors and city doctors treat their patients in very much the same way. But as this is not so, the conclusions seems plain that it is the urban atmosphere which fosters this variety of inebriety through example, imitation, and social associations, in much the same way that alcoholic intemperance is fostered.

TABLE 49.—*State of residence of cases of drug addiction*

State of residence	White		Colored		State of residence	White		Colored	
	Num- ber	Per cent	Num- ber	Per cent		Num- ber	Per cent	Num- ber	Per cent
Alabama.....	13	1.2	1	0.1	New Hampshire.....	4	2.9	—	—
Arizona.....	5	4.2	1	16.7	New Jersey.....	43	3.0	12	19.4
Arkansas.....	23	2.6	1	.3	New Mexico.....	1	.3	—	—
California.....	36	3.3	20	57.1	New York.....	541	8.4	33	20.5
Colorado.....	10	2.1	—	—	North Carolina.....	10	.7	1	.3
Connecticut.....	18	2.9	1	7.7	North Dakota.....	1	.4	—	—
Delaware.....	9	9.8	14	35.0	Ohio.....	101	2.7	6	3.5
Florida.....	14	2.9	1	.8	Oklahoma.....	88	7.4	8	4.9
Georgia.....	38	2.5	1	.2	Oregon.....	8	2.6	4	100.0
Idaho.....	—	—	—	—	Pennsylvania.....	157	2.8	17	6.0
Illinois.....	59	1.5	—	—	Rhode Island.....	11	4.9	2	20.0
Indiana.....	11	.6	1	2.3	South Carolina.....	14	1.9	—	—
Iowa.....	25	2.6	4	16.7	South Dakota.....	1	.3	—	—
Kansas.....	23	2.5	4	7.8	Tennessee.....	46	3.5	5	.7
Kentucky.....	22	1.2	4	2.3	Texas.....	66	4.1	5	1.5
Louisiana.....	24	2.5	2	.3	Utah.....	12	7.9	—	—
Maine.....	5	1.3	—	—	Vermont.....	—	—	—	—
Maryland.....	14	1.6	—	—	Virginia.....	17	1.2	3	.5
Massachusetts.....	42	2.7	3	14.3	Washington.....	30	6.8	—	—
Michigan.....	24	1.1	3	6.5	West Virginia.....	13	1.1	2	2.5
Minnesota.....	26	2.2	—	—	Wisconsin.....	9	.7	—	—
Mississippi.....	27	3.1	—	—	Wyoming.....	3	2.6	—	—
Missouri.....	82	3.0	30	30.8	District of Columbia.....	4	2.5	1	1.1
Montana.....	10	27.3	2	50.0	State unascertained and others.....	49	—	2	—
Nebraska.....	13	2.6	3	27.3					
Nevada.....	1	1.7	—	—	United States.....	1,823	3.0	197	2.3

Percentages are based on total neuropsychiatric cases of each color from each State.

TABLE 50.—*Per cent distribution of neuropsychiatric conditions in 12 States in which the rate for drug addiction exceeded the United States rate of 3 per cent*

State of residence	Drug addiction	Mental deficiency	Psychoneuroses	Psychoses	Neurological conditions	Epilepsy	Constitutional psychopathic states	Endocrinopathies	Alcoholism
United States.....	3.0	29.2	17.0	12.1	10.0	8.6	9.7	7.4	3.0
Arizona.....	4.2	15.0	12.5	16.7	18.3	10.8	11.7	6.7	4.2
California.....	3.3	22.0	16.7	17.4	12.2	7.7	12.7	2.7	5.3
Delaware.....	9.8	22.8	12.0	12.0	14.1	7.6	8.7	6.5	.5
Mississippi.....	3.1	35.4	22.2	9.8	8.3	10.9	6.7	2.1	0.6
Montana.....	3.7	16.7	16.0	20.8	11.2	1.9	8.9	7.9	3.0
New York.....	8.4	19.8	18.3	11.6	8.8	10.0	13.1	6.3	3.5
Oklahoma.....	7.4	33.3	15.6	11.8	12.7	6.7	6.7	4.0	1.9
Rhode Island.....	4.9	29.2	18.8	9.9	7.2	9.4	9.9	4.0	6.7
Tennessee.....	3.5	43.0	14.3	9.6	11.9	8.0	3.8	5.1	.8
Texas.....	4.1	25.5	14.8	17.6	12.3	13.4	8.8	2.3	1.1
Utah.....	7.9	20.5	19.2	18.5	6.0	7.9	12.6	4.0	3.3
Washington.....	6.8	26.1	14.1	17.7	8.2	7.5	9.5	9.3	.9

STATE OF RESIDENCE (WITH GAIN OR LOSS FROM MIGRATION OR IMMIGRATION)

Drug addiction constituted 2.9 per cent of the total of neuropsychiatric cases; 3 per cent for the whites, and 2.3 per cent for the colored. (See Table 49.) Among the colored the average of 2.3 per cent was greatly exceeded in the States of Arizona, California, Delaware, Iowa, Massachusetts, Missouri, Montana, Nebraska, New Jersey, New York, Oregon, and Rhode Island. Illinois furnished no cases among the colored. Among the whites the following States exceeded the United States average: Arizona, California, Delaware, Mississippi, Montana, New York, Oklahoma, Rhode Island, Tennessee, Texas, Utah, and Washington. (See Table 50.) Of the total, New York furnished more than one-quarter of the cases; and more than half were furnished by the States of New York, Ohio, Pennsylvania, California, and Missouri. These statistics show how essentially local drug addiction is.

CORRELATIONS WITH OTHER CLINICAL CONDITIONS

In preceding paragraphs on correlation it has been indicated that drug addiction, in common with psychoses and alcoholism, tends to sink below the distribution average in both States and races, when mental deficiency rises above it. How far the converse of this holds true in the States is shown in Table 50, which enumerates 12 States that exceed the United States distribution average of 3 per cent for drug addiction. For all these clinical conditions named, the converse holds true as far as the average of the whole 12 States is concerned. For example, the average for these States for mental deficiency is 25.8 per cent, for drug addiction, 5.6 per cent. The converse does not hold true for every State. As to mental deficiency, Mississippi, Oklahoma, and Tennessee exceed the average; as to psychoses, 6 fall below; as to alcoholism, 5 fall below.

Of the classified races (Table 34) six—Indian, Hebrew, Irish, Italian, Scotch, and mixed—exceed the United States distribution rate for drug addiction of 3 per cent. Of these six, all but the Indian and the Italian fall below the mental deficiency average. No foreign-born race reaches the United States average of 3 per cent for drug addiction.

From this it appears that drug addiction is antagonistic to mental deficiency, with the tendency to group itself with the conditions which indicate a higher mentality, such as psychoses and alcoholism. This tendency is less marked than in alcoholism. It further appears that those born in America are more prone to drug taking than those born abroad. It might be advisable to consider both alcoholism and drugs under a common title of inebriety.

Perhaps the two conditions are interchangeable means of expressing a common mental tendency or predisposition. For example, the foreign-born Irish drink heavily and are little given to drugs; while the native Irish drink much less than their foreign born brothers do, but take drugs more freely. (See Table 33.) There seems to be a distinct tendency for drug taking to become higher in native as opposed to foreign born stock, a fact to be explained, perhaps, by the proselyting traffic in drugs which exists in the large cities in the United States. It may be that drug taking is an expression of a tendency to inebriety which finds particularly favorable conditions here.

ALCOHOLISM, INCLUDING THE ALCOHOLIC PSYCHOSES

The most noteworthy facts, established as to the distribution of chronic alcoholism among recruits, were the small number found, the excess among volunteers as compared to drafted men, the excess of alcoholism in communities and races low in mental deficiency, and the excess of mental deficiency in communities and races low in alcoholism—a fact especially clear as regards negroes.

It must be understood that, as used here, the term chronic alcoholism signifies more than intemperance, and the term alcoholic, more than a drinking man. Alcoholic, as used here, means a person physically sound in other respects, who has become poisoned by alcohol to a degree to be unfit to bear arms. Of the total 69,394 neuropsychiatric cases under consideration, 1,858, or 2.7 per cent, were chronic alcoholics. (See Table 6.)

How many intemperate men were accepted for service and made good under military conditions we have no means of knowing; we know only the number of those whose habits had brought about disabilities so serious that the Government did not think it worth while to try to reconstruct them. These, during their brief time of service, caused comparatively little trouble. They were quickly identified and discharged.

The relatively small number of cases identified raises the question whether all possible ones were included, or if other reasons existed which might explain it. It should be remembered that the number 1,858, as given in Table 6, does not include the 292 cases of alcoholic psychoses. To express fully the effects of alcohol on recruits these 292 cases should be added, making a total of 2,150 camp cases. If the local board cases approximate 1,000 the grand total of alcoholics for the mobilization of approximately 3,500,000 men examined would be 3,150, or less than 1 per thousand.

This result is so small, so far below any estimates that had been made, that one immediately inquires if the youth of the men of our army had something to do with it; for it is well established that a long period of steady drinking is necessary for the development of alcoholism, a fact substantiated by the present statistics; and in our Army, at least, the average age of alcoholics was shown to

be above the average age of recruits. In response to this it may be said that approximately one-half of the alcoholics identified were not drafted men, but were volunteers, a group which averaged higher in age than drafted men. If the 1,199 alcoholics who were volunteers are subtracted from the 3,150 total alcoholics, there remain only 1,951 cases of drafted men who were found alcoholic. Even if only one-third of the draft had reached the age most favorable to alcoholism, the above number of them is so small that it is plain that alcoholism can not be considered as affecting to any degree the military strength of the United States.

Among negro troops alcoholism practically did not exist—there were only 29 cases, including 5 cases of alcoholic psychoses, as compared with 4,055 cases of mental defect. The great disparity between these two conditions in negroes made it necessary, in constructing United States distribution averages, to leave the negro out of account, and to make the averages on the basis of whites.

TABLE 51.—*Per cent distribution of neuropsychiatric conditions in 17 States in which the rate for alcoholism, including alcoholic psychoses, exceeded the United States rate of 3.5 per cent*

State of residence	Alcoholism (including alcoholic psychoses)	Mental defect	Psychoneuroses	Psychoses	Neurological conditions	Epilepsy	Constitutional psychopathic states	Endocrinopathies	Drug addiction
United States.....	3.5	29.2	17.0	12.1	10.0	8.6	9.7	7.4	3.0
Arizona.....	5.0	15.0	12.5	16.7	18.3	10.8	11.7	6.7	4.2
California.....	6.0	22.0	16.7	17.4	12.2	7.7	12.7	2.7	3.3
Connecticut.....	5.7	26.7	17.8	15.9	7.7	10.6	10.3	3.1	2.9
Delaware.....	8.7	22.8	12.0	12.0	14.1	7.6	8.7	6.5	9.8
Illinois.....	7.0	19.9	20.6	13.8	10.7	8.3	9.1	9.8	1.5
Massachusetts.....	8.8	25.7	18.1	14.4	6.9	10.4	12.2	1.7	2.7
Minnesota.....	4.9	22.2	19.5	11.0	10.9	7.3	7.1	12.0	2.2
Montana.....	3.7	16.7	16.0	20.8	11.2	11.9	8.9	7.8	3.7
Nevada.....	18.3	18.3	11.7	18.3	18.3	8.3	6.7	1.7	1.7
New Hampshire.....	4.4	27.7	23.4	10.2	7.3	10.2	12.4	1.5	2.9
New Jersey.....	3.6	27.6	16.6	13.4	6.8	12.6	11.2	5.7	3.0
New York.....	4.3	19.8	18.3	11.6	8.8	10.0	13.1	6.3	8.4
Pennsylvania.....	6.0	27.0	15.3	11.0	9.3	7.6	12.0	9.9	2.8
Rhode Island.....	7.2	29.2	18.8	9.9	7.2	9.4	9.9	4.0	4.9
Wisconsin.....	3.9	27.0	19.2	12.6	11.6	6.8	6.2	12.6	0.7
Wyoming.....	7.8	21.7	24.3	8.7	11.3	8.7	9.6	5.2	2.6
District of Columbia.....	3.7	16.1	23.6	19.9	14.3	6.2	8.7	6.2	2.5

CLASSIFICATION

The only effort made to classify the different varieties of alcoholism was to separate the alcoholic psychoses from the chronic form of poisoning. As has already been stated, in grouping the whole neuropsychiatric material, the alcoholic psychoses were considered as belonging to the psychoses. If they were omitted from an intensive study on alcoholism in troops, the result would be an incomplete picture, and so, in this section on alcoholism, the general statistical information includes the psychoses due to alcohol.

METHODS OF DISCOVERING CASES

The neuropsychiatric examinations were usually near the head of the list of the camp examinations, and consequently were in a favorable position as regards the prompt identification of conditions which presented physical

symptoms. Of all the neuropsychiatric groups, alcoholism and endocrine disturbances presented more physical symptoms than the others. These two groups, therefore, furnished the highest proportion of cases detected by the routine examinations, 63.9 per cent in the case of alcoholism. (See Table 8). Of the other methods of discovering cases, 26.9 per cent of the cases were referred by other medical officers, these cases being in large part those requiring treatment for such conditions as delirium tremens. Only 8.9 per cent were referred by commanding officers and only a few cases by the courts martial and by the psychologists.

LENGTH OF SERVICE PRIOR TO DISCOVERY

The alcoholics were sifted out very promptly. Table 10 shows 71.6 per cent of all alcoholic cases were identified before they had been in service one month, which is the shortest service rendered by any one group.

TIME OF ONSET

Only five of the cases of alcoholism and six of alcoholic psychoses gave the date of onset after entering the service. (See Table 11.) The large majority of cases whose time of onset was ascertained gave a history of alcoholism for more than five years before entering the service. The essential chronicity of alcoholism which disabled for military service is thereby shown.

RECOMMENDATIONS FOR DISPOSITION

As the greater number of the cases of alcoholism were of long standing, they were considered as of little value to the service, and 1,844, or 85.8 per cent, were recommended for discharge or rejection, and 306, or 14.2 per cent, for treatment, duty, and limited service. (See Table 12.) Excepting the epilepsies and psychoses, recommendations for discharge and rejection ran higher among the alcoholics than in any of the other groups of neuropsychiatric cases.

DELINQUENCY

Thirty-one cases of alcoholism were referred for examination as to misconduct. These constituted 2.1 per cent of the total neuropsychiatric misconduct cases.

FAMILY HISTORY

Of the 1,873 cases analyzed under this heading 744, or 39.7 per cent, have a history of some hereditary neuropathic taint. (See Tables 13 to 17.) These figures indicate the clearest neuropathic inheritance of any neuropsychiatric group. The negro cases form an exception. When individual family neuropsychiatric conditions are investigated, it appears that inebriety takes precedence of all others. Family inebriety occurs with a greater relative frequency among alcoholics than among any other group. Alcoholism in fathers appears especially prominent.

AGE

Table 20, which gives the ages of the cases of alcoholism, shows that 36.2 per cent of the cases were between the ages of 30 and 34. The increased ages of alcoholics found in the Army when compared with the statistics relating to the other groups is as follows:

Age, 30 to 34:	Per cent
Alcoholism.....	36.2
Nervous diseases and injuries.....	19.5
Psychoses.....	16.0
Drug addiction.....	14.5
Psychoneuroses.....	12.8
Constitutional psychopathic states.....	12.8
Mental deficiency.....	9.7
Endocrinopathies.....	9.4
Epilepsy.....	9.4

The ages of alcoholics can not be considered without noticing the conditions affecting volunteers and drafted men, a subject referred to elsewhere.

EDUCATION

Table 23 indicates that 89.6 per cent of the cases did not pass beyond the grades; that 8.2 per cent entered high school, and that an additional 2.1 per cent entered college. When compared with the statistics of the other groups of neuropsychiatric cases, with the exception of mental deficiency, one finds the smallest percentage to enter high school and college among the alcoholics. On the other hand they shared with drug addicts the distinction of being only a little behind the average soldier in having had some schooling.

ECONOMIC CONDITION

Only 170, or 7.8 per cent, of the alcoholics were in comfortable circumstances. Not one of the 29 colored alcoholics was in comfortable circumstances. The whites were 4.5 per cent below the average for all neuropsychiatric white cases. With the exception of mental defectives, the percentage in comfortable circumstances is lower than for any other group. Next in order come drug addicts.

HISTORY OF VENEREAL DISEASES

Venereal infections of all kinds were far more frequent among the white alcoholics than among any other group of neuropsychiatric cases, except the drug addicts and the group of nervous diseases and injuries. Among the colored this did not hold true. (See Table 25.)

MARITAL STATUS

Marriages were about as frequent among the alcoholics as among the other groups of neuropsychiatric disorders; divorcees, however, were twice as frequent among them. (See Table 27.)

HOME ENVIRONMENT—URBAN OR RURAL

One thousand seven hundred and one, or 82.8 per cent, were from the urban districts. The percentages for urban residences were largest for alcoholics and drug addicts. (See Table 28.)

STATE OF RESIDENCE

Seventeen States exceeded the United States distribution average of 3.5 per cent as to alcoholism, viz, Arizona, California, Connecticut, Delaware, Illinois, Massachusetts, Minnesota, Montana, Nevada, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Wisconsin, Wyoming, District of Columbia. (See Table 51.)

When the States exceeding the neuropsychiatric (camp) rate for alcoholism are compared with the States which exceeded the local board rate, as given in Table 5, it is found that a substantial agreement exists between the results of examinations by local boards and at camps. In 11 of the States mentioned—California, Connecticut, Delaware, District of Columbia, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Rhode Island, and Wisconsin—the average alcoholic rate was exceeded at both draft boards and at camps. One State, Pennsylvania, which exceeded the camp rate, just equaled the local board rate. Of the States in which the camp examinations showed an over-average and the draft board examinations did not, in four—Arizona, Montana, Nevada, and Wyoming—the numbers covered in the camp examinations were too small to be of great significance. In Illinois there was a distinct disagreement between the two sets of figures. There were only four States—Maryland, Missouri, New Mexico, and Vermont—in which an excess in the average at draft boards failed to correspond with an excess at the camps.

It would seem, therefore, that in general an excess of alcoholism in the population of any State was remarked by both draft examiners and camp examiners.

NATIVITY

Two hundred and sixty-four, or 12.3 per cent of all cases, of alcoholism were foreign born. This is considerably below the percentage of foreign born in Class I men (17 per cent) and above the percentage (10 per cent) of the foreign born in the whole neuropsychiatric group.

CORRELATIONS WITH OTHER CLINICAL CONDITIONS

In the discussion of mental defect, attention was drawn to the fact that in States and races where mental defect was over-average, alcoholism was under-average. The converse of this also holds true. Among the 17 States (Table 51) which exceeded the United States distribution average for alcoholism, none exceeded the United States distribution rate for mental deficiency. One only, Rhode Island, equaled it. The others all fell below.

Further correlations of alcoholism with other clinical conditions show few rates of particular significance except in the cases of psychoses. The latter

appear to have an excess distribution rate in States high in alcoholism. In explanation of this, two hypotheses are possible: That intemperance increases insanity, or that men of the psychotic group are prone to excess in alcoholic indulgences. The correlation of alcoholism with other conditions in both native and foreign-born races is in agreement with those observed in the States. In other words, among races in which the alcoholism rate is high, the mental-deficiency rate is low, while the rate for psychoses is usually high. (See Table 34.) An exception is to be noted in the case of the Irish, where the alcoholism rate is high, but the rate for psychoses is below the average except for the foreign born.

REFERENCES

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- (2) Based on: History of Base Hospital No. 214, by the commanding officer. On file, Historical Division, S. G. O.
- (3) Psychological Examining in the United States Army. Memoirs of the National Academy of Sciences, Volume XV. Washington, Government Printing Office, 1921, 553.
- (4) Second Report of the Provost Marshal General, to the Secretary of War, on the Operations of the Selective Service System to December 20, 1918. Washington, Government Printing Office, 1919, 118.
- (5) Ibid., 159.
- (6) Special Regulations, No. 65, W. D., 1918.

SECTION II

IN THE AMERICAN EXPEDITIONARY FORCES

INTRODUCTION

A large part of the neuropsychiatric work in the United States (described in Section I of this volume) had for its objects the maintenance of a successful effort to combat war neuroses in the American Expeditionary Forces and the provision of efficient and humane treatment in France for those of our soldiers who fell victim there to mental disease. In a sense, therefore, this section deals with the continuation of that work and its fruition.

After thoughtful consideration in the Surgeon General's Office, certain general principles, based upon the recommendations of the special committee appointed in March, 1917,^a were approved. Stated broadly these principles were: First, that it is not only in accordance with the best scientific practice to treat soldiers suffering with war neuroses as early and as effectively as possible but to do so is an important contribution toward the conservation of manpower and military morale; second, that a point of view regarding these disorders based upon a rational conception of their physiological and psychological origin should at all times be maintained and should form the basis for medico-military effort; third, that in neuropsychiatric work, as far as the exigencies of actual service permit, responsibility and leadership should rest in the hands of those who had had special training in this department of medicine.

The success attained was due, first, to a clear conception on the part of the highest military authorities of the objectives to be reached and of the general plan to be followed in attaining them; and second, to the cooperation of several hundred specialists in neuropsychiatric work in connection with combat troops, general and special hospitals, courts-martial, camps, classification boards, and prisons.

^a The recommendations of this committee are given in full in the Appendix, p. 489.

CHAPTER I

GENERAL VIEW OF NEUROPSYCHIATRIC ACTIVITIES

As early as the summer of 1917 the chief surgeon, A. E. F., had been considering the organization of a group of specialists to direct and coordinate the special medical and surgical professional services in the American Expeditionary Forces. It was realized that, while base hospitals and tactical divisions would be adequately supplied with medical personnel, many of them leaders in medicine, surgery, and the specialties in the civil profession in the United States, professional standards throughout all the activities of an army could not be maintained at a high level, however efficient the medical officers of individual organizations might be, without some provision for the supervision of professional work by consultants in the main branches of medicine. This fact was conclusively demonstrated in the experience of our allies. Elsewhere in this history there is given an account of the organization, in September, 1917,^b of such a group of consultants.

ORGANIZATION OF THE NEUROPSYCHIATRIC SERVICE

The beginning of a well-defined neuropsychiatric service in the American Expeditionary Forces may be said to date from December 24, 1917, when a director of psychiatry was appointed. A medical officer, who had been assigned to duty in England to study the treatment of war neuroses, was shortly afterward assigned as assistant in the office of the director of psychiatry.

The newly organized neuropsychiatric service found plenty of urgent tasks. It was apparent that no time could be wasted in providing for neuropsychiatric work in the tactical divisions if the American forces were to escape the heavy toll of casualties from functional nervous disorders that had been borne by the other armies earlier in the field. Although chief reliance had to be placed upon the assignment of a consultant in each tactical division who could help in the task of dealing with war neuroses at their very inception, there was no provision in the military organization for such an extra medical officer. Early in January, however, the War Department approved the plan¹ that had been devised in the American Expeditionary Forces for the provision of a divisional neuropsychiatrist,² thus making it possible to assign to each combat division "one specialist in nervous and mental diseases."¹

The instructions in this connection applied to the United States; however, they permitted division psychiatrists to be detached by the commander in chief, A. E. F., upon the arrival of divisions in France, if that seemed to be desirable. It was for this reason that these officers were not included in the tables of organization, a factor which gave rise to some difficulty later on. Fortunately,

^b Vol. VIII, pp. 20-21.

there was no disposition on the part of the chief surgeon, A. E. F., to recommend their detachment, although some of the division surgeons felt that, being attached to a field hospital, their work should be confined to such an organization and not be broadened so that they could help, if needed, in every regiment, train, and company. Had it been possible to foresee this handicap, division psychiatrists would have been attached in the first place to the office of the division surgeon, as was done later with practically all divisional consultants by the division surgeons on their own initiative. On September 8, 1918, a communication from the chief surgeon, A. E. F., to all division surgeons directed that divisional consultants "should be attached to the office of the division surgeon as additional assistants,"³ thus confirming a status which, in most instances, had already been granted.

There were in France in January, 1918, five divisions (1st, 2d, 26th, 41st, and 42d).⁴ All but the 41st were in training areas centering in Chaumont, the location of general headquarters, A. E. F. Neufchateau, headquarters of the professional services, was 40 miles from Chaumont and quite as convenient a center for work in the training areas. The problem was to find psychiatrists for assignment as division consultants. Fortunately, in July, 1917, seven medical officers who had had special training in nervous and mental diseases had been sent to England to observe the treatment of war neuroses in the different British war hospitals. Orders were secured for four of these officers, all of whom were men with high professional and personal qualifications, to report to the divisions then in France. By the middle of January all four had been assigned to duty. The work of division psychiatrists, as they were always termed, from this small beginning until the demobilization of the American Expeditionary Forces, is given in detail in the next chapter.

REORGANIZATION OF THE NEUROPSYCHIATRIC SERVICE

In the latter part of April, 1918, a new plan was put into effect by General Orders, No. 88, G. H. Q., under which the directors were termed senior consultants in the various specialties and the medical and surgical groups were under the general direction of a chief consultant in medicine and a chief consultant in surgery, respectively. The former directors became senior consultants, A. E. F.; consultants, A. E. F., were also provided.

In the division of neuropsychiatry, an assistant director of psychiatry, A. E. F., who had been appointed April 10, 1918, now became consultant in neuropsychiatry, A. E. F. Although the considerations that had led to the establishment of the immense hospital centers in the American Expeditionary Forces were chiefly of an administrative nature (for example, the great amount of material needed in the construction of long sidings for the American hospital trains that brought the wounded from the front), the chief surgeon, A. E. F., had not lost sight of the fact that professional services in the hospitals constituting these centers could be supervised effectively by a consultant in each of the more important specialties. Some of the most distinguished American physicians and surgeons served in this capacity with great advantage not only to the sick and wounded but to the other officers in their specialty who found encouragement to conduct their work on the highest possible level.

By August 1, 1918, neuropsychiatric consultants had been assigned to Base Sections Nos. 1 (St. Nazaire) and 2 (Bordeaux), and to the hospital centers at Bazoilles-sur-Meuse, Paris, Tours, and Vittel-Contrereville. A station list issued immediately after the armistice was signed showed that consultants in neuropsychiatry were on duty in the following base hospital centers:⁵ Allerey, Beaune, Bazoilles, Commercy, Limoges, Mars, Nantes, Paris, Tours, Vichy, and Vittel-Contrereville. Base Sections Nos. 1 (Savenay) and 2 (Bordeaux) were similarly provided for. Although no officers had been designated general consultants for the following centers, each of them had at least one base hospital to which a neuropsychiatrist was attached: Clermont Ferrand, Dijon, Langres, Mesves, and Rimaucourt.⁵

At the time of the signing of the armistice the administration of the professional services, as far as neuropsychiatry was concerned, was on a very effective and satisfactory basis and could have continued so with a very much larger load of responsibility in all activities. There was considerable difficulty in keeping in touch with different officers assigned to this work, but efforts continually were being made to improve methods of communication. It was planned to have conferences during the winter, in which studies could be made of experiences to date and plans could be prepared for the heavy load that was expected when activities were resumed in the spring.

Immediately after the armistice began, the medical officer who had served since January, 1918, as division psychiatrist in the 2d Division, was assigned to duty as consultant, Base Section No. 3 (Great Britain.)

NEUROPSYCHIATRIC HOSPITALIZATION FACILITIES DURING THE PERIOD OF ACTIVE HOSTILITIES

The realization of the general hospitalization project of the American Expeditionary Forces⁶ depended upon many uncertain factors, and it was necessary to scrutinize every new demand for hospital beds with the utmost care. To ask for more than a due share for any special class of patients would be as harmful to the ultimate success of the program as to make requisition for too few to meet the expected load. The minimum provisions to meet the neuropsychiatric needs, if the program decided upon was to be carried through, were a special hospital for war neuroses just behind the front line in the proposed American sector; a psychiatric collecting station for the emergency care of the psychoses in the training area where it would be equally accessible from the front and from the divisions in training; psychiatric wards and, later, a special neuropsychiatric hospital at the principal base port, to facilitate the evacuation to home territory of patients who would not be returned to front line duty or even reclassified for duty in the Services of Supply; neuropsychiatric wards at other base ports; and a few neuropsychiatric departments at the hospital centers which it was proposed to establish at convenient points along the line of communications and which ultimately were destined to provide the major portion of the hospital beds in the American Expeditionary Forces.

⁶ Consult Chaps. XV and XVI, Vol. II of this history for details concerning the hospitals of the American Expeditionary Forces.

Within the first 60 days after a professional service in neuropsychiatry was organized, in other words, by the end of February, 1918, there were 16 base hospitals along the American line of communications, receiving, or ready to receive patients.⁶ It was not yet possible to determine which of the projected hospital centers would be the best one in which to develop the psychiatric collecting station, but there was organized in Base Hospital No. 66 at Neufchateau a special ward for mental patients to meet the immediate need.⁷ A medical officer and enlisted men with neuropsychiatric experience were assigned to care for mental patients. As soon as Bazoilles-sur-Meuse was definitely selected as the site for such a center, it was determined to place the main psychiatric collecting station there because of its proximity to the prospective site of Base Hospital No. 117, at La Fauche, and the headquarters of the professional services at Neufchateau and its nearness to the proposed American front. On February 27, the following recommendations regarding neuropsychiatric departments in such centers were made to the chief surgeon, A. E. F., by the director of neuropsychiatry:⁸

1. Where it has been determined to establish several standard base hospitals in groups (as at Bazoilles and Vittel-Contrexeville) it is obviously more economical of personnel, special equipment, and construction to provide a central neuropsychiatric department which can serve all hospitals in the group than to provide neuropsychiatric wards for each base hospital.

2. An added advantage in the collection of such wards into a unit, is that a classification of patients which will lead to much better therapeutic results can be made. It is not uncommon to find at the same time in a neuropsychiatric ward an excited manic-depressive case, several patients with middle grade mental defect sent in for observation, a case with febrile delirium, and others who have shown no abnormalities of conduct but have slight depressions or neurasthenic symptoms. Satisfactory treatment under such conditions is often impossible. If such wards are grouped, however, each may care for a different general class of patients.

3. It is recommended, therefore, that in each standard base hospital group a neuropsychiatric department be provided, with from 50 to 60 beds.

4. The personnel of such a neuropsychiatric department should be made up in accordance with the suggestions in the appended table. At least one of the medical officers should be a man of sufficient experience to enable him to act as consultant in all kinds of difficult cases; the others could be younger men, capable of doing valuable work under his general direction.

5. The commissioned officers of such neuropsychiatric departments can be furnished from the specialists now in the American Expeditionary Forces and those who will come with base hospital units. The noncommissioned officers, female nurses, and enlisted men can be supplied from those with suitable experience now attached to various hospital organizations and from Base Hospital No. 117 (neuropsychiatric hospital) which is intended to serve partly as a training hospital and replacement center for neurological and psychiatric personnel.

NEUROPSYCHIATRIC DEPARTMENT, STANDARD BASE HOSPITAL GROUP PERSONNEL

Commissioned officers

Major ^d	In general charge.
Captain ^d	Ward physician.
First lieutenant ^d	Do.

Noncommissioned officers

Sergeant, first class ^d	In general supervision.
Sergeant	Mess and kitchen.
Sergeant	Office.

^d Indicates that special training in the care of mental and nervous cases is required.

Nurses, female

Acting chief nurse ^d -----	1.
Ward nurses (day) ^d -----	4.
Ward nurses (night) ^d -----	2.
Ward nurses (relief) ^d -----	1.

Privates and privates, first class

Ward attendants (day) ^d -----	7.
Ward attendants (night) ^d -----	4.
Ward attendants (relief) ^d -----	2.
Mess and kitchen-----	3.
Office-----	1.

Recapitulation

Commissioned officers-----	3
Noncommissioned officers-----	3
Nurses, female-----	8
Privates and privates, first class-----	17
	<hr/>
	31

The neuropsychiatric department of the base hospital at Bazoilles-sur-Meuse, established in connection with Base Hospital No. 116, became the "Psychiatric Collecting Station," the activities of which are referred to again below.

HOSPITAL FOR WAR NEUROSES (BASE HOSPITAL NO. 117)

Second only in urgency to the provision of a foundation for psychiatric work with troops in the field was the establishment of a special hospital for war neuroses as far forward as possible in the advance section, for it was upon these two resources that chief dependence was to be placed for effective management and treatment of the war neuroses. Fortunately at La Fauche (a tiny village on the main route between Chaumont and Neufchateau) there was one of the camp hospitals with which each training area was to be provided.⁶ The use of this hospital as a special hospital for war neuroses was recommended in February, 1918, by the director of neuropsychiatry, A. E. F.⁹ The chief surgeon, A. E. F., approved this plan and a provisional neuropsychiatric personnel immediately occupied it and assisted in its completion.

Its activities soon increased to such an extent that by the end of May it was obliged, because of the great increase in the number of war neuroses and the lack of adequate personnel, to refuse new admissions.¹⁰ The special hospital care of these cases was the most urgent need in all the neuropsychiatric activities at that time. Though the permanent personnel for Base Hospital No. 117 had been organized early in the year in the United States, they were still detained at Camp Crane, Pa. War neuroses cases were appearing in increasing numbers in base hospitals throughout the American Expeditionary Forces, where they were treated without special facilities and in accordance with many different clinical points of view. It was by no means easy to arrange for their transfer to Base Hospital No. 117, and thus additional evidence was provided that

^dIndicates that special training in the care of mental and nervous cases is required.

some method of directing the evacuation of these men from the divisions must be devised or the problem of controlling the incidence of war neuroses would not be solved successfully in our Army. On June 16 the highly trained personnel of neuropsychiatrists, nurses, and occupational aides for Base Hospital No. 117 arrived at La Fauche and within a few weeks this hospital became an efficiently organized special institution for the treatment of a special type of illness—war neuroses.¹⁰ Base Hospital No. 117 rapidly became the center for scientific work and training in neuropsychiatry in the American Expeditionary Forces. Its ability to receive patients thereafter was limited only by its capacity.

By September it was apparent that this hospital would have to be greatly enlarged and so plans were drawn for the addition of a sufficient number of beds to bring the capacity to 1,000. This was accomplished by the time the armistice was signed.¹⁰ The necessity for a convalescent camp operated in connection with Base Hospital No. 117 had already been shown by the disastrous results of allowing convalescent patients to go to general convalescent camps when they no longer required hospital treatment. An entirely different point of view as to the nature of war neuroses often prevailed in the general convalescent camps, and the result was a large number of relapses just when the maximum improvement could have been expected. The plan for a convalescent camp at La Fauche was very carefully thought out. It was intended to provide for about 1,000 patients under an environment quite different from that of the hospital or of a general convalescent camp. Drill, including machine-gun and hand-grenade practice, were to constitute an important feature, and it was hoped that a special group of men could be organized into a company of infantry from those most nearly ready to return to duty. This plan, of course, was abandoned with the armistice.

It was apparent that additional hospital provisions for war neuroses would be required if hostilities continued. On September 14, 1918, therefore, the senior consultant recommended a second hospital in the following letter to the chief surgeon:¹¹

1. The number of troops in France makes it necessary now to consider the provision of the second hospital in the S. O. S. for the treatment of war neuroses. In order to have one bed per thousand combatant troops, which is generally agreed to be the minimum required, it is necessary to provide another hospital as large as Base Hospital No. 117. This hospital should be at least as near the front as La Fauche and preferably not more than 60 miles to the west of it in order that a convalescent camp for these cases can be established between them which will be easily accessible from each. Perhaps a nucleus for such a hospital can be found north of Epinal.

2. If next summer, with the enlargement of our Army, a third is necessary, it could be located somewhere in the southern part of France and be used for a special class of cases—the most unfavorable type—those arising in training areas and the S. O. S. and others who have had successive relapses, the other two hospitals being employed exclusively for cases from the front.

3. It seems necessary to look this far ahead in order that this problem may not get beyond our control.

4. I have great hopes of the results to be obtained in such advanced stations for temporary care as those which we have just been able to establish at Toul and Bennoite-Vaux. The work in tactical divisions is becoming much better organized and I think that we may look for a decrease rather than an increase in these cases as our mechanism for dealing with

them at an early point develops. I am quite sure that as a result of this method of management we shall have few of the very intractable cases seen among the British.

5. Has the division of hospitalization an offer of property in the region lying north of Epinal and east of Naney that I might look at soon and report upon as to its suitability?

Had hostilities continued, the personnel of this second hospital would have been provided by the replacement unit due to arrive in France in October.

After the armistice began, new admissions to Base Hospital No. 117 declined very rapidly and a large number of men were restored to duty who otherwise would have required a considerable period of treatment.¹⁰ There was not, however, as has been stated, any very marked change in the character of the war neuroses or in their prognosis. It was simply possible to restore to A or B status some men who would have been classified C or D, had the war continued. By January 9, 1919, the number of patients had diminished to 149,¹² and during the following week those remaining were transferred to Base Hospital No. 214, Savenay, which from that time on conducted two departments, one for psychoses and one for psychoneuroses.¹³ The total admissions from the opening of the hospital were 3,268, 50 per cent of whom were returned to combat duty and 41 per cent for other military duty in the American Expeditionary Forces.¹⁰

PROVISIONS FOR MENTAL DISEASES (PSYCHOSES)

Although the total number of American troops in France in January, 1918, was only approximately 203,000,¹⁴ the caring for mental patients had already become a problem. It was obvious at the outset that such patients could not be cared for in the individual American base hospitals scattered throughout France, partly because of the lack in some of them of medical officers, nurses, or enlisted personnel who had had experience in the actual care and treatment of patients suffering from acute mental disorders, but chiefly because of the absence of any special facilities for treatment. In order to function as a collecting station the neuropsychiatric department at Bazoilles would have to be provided with an outlet. Therefore, mental patients had been collected as far as possible at Base Hospital No. 8, at Savenay, near the base port of St. Nazaire, where two wards were set apart for their reception and treatment.¹⁵ The growth of these two wards into an efficient hospital for mental cases of 1,000 beds, with every modern facility for psychiatric diagnosis and treatment, is described in detail in Chapter VI of this section. Base Hospital No. 66 at Neufchateau already was serving as a temporary psychiatric collecting station for the troops in the training area. Most of its neuropsychiatric patients reported at the time under consideration were mental defectives who had been "weeded out" by the divisional psychiatrists as one of their first tasks.

The following recommendations for the care of mental cases, made by the director of psychiatry to the chief surgeon, A. E. F., February 1, 1918, indicates the general nature of the plans then being shaped:¹⁶

1. Mental cases (insanity, mental deficiency, and constitutional psychopathic states) can be expected to furnish a considerable proportion of all soldiers of the Expeditionary Forces who will have to be invalided home. Already these cases constitute 30 per cent of the total number so returned. In the Canadian overseas forces, in spite of the enormous

incidence of disability resulting from battle casualties, about 12 per cent of all soldiers returned during the war have been mental cases.

2. It is apparent from these facts that arrangements must be made for dealing with this problem. If a simple and effective mechanism for treating and evacuating mental cases is devised and put into operation while the number to be provided for is still relatively small, "much subsequent difficulty (as well as unnecessary hardships for a class of the sick having very special needs) can be prevented.

3. Any such mechanism must take into account the fact that practically no soldier who has had a psychosis and few other mental cases should be returned to duty in France. It is not meant to imply by this statement that the psychoses common among soldiers are especially unrecoverable. The reverse is the case. It is unwise to return to duty such cases, however, until a considerable period has elapsed after their recovery. This fact and the long period of treatment usually required in mental cases make it undesirable to provide for continued care in France. Provisions here must be considered as simply preliminary to their return to the United States as promptly as possible. Little more can be undertaken here than to make a careful diagnosis in each case and to provide for efficient treatment while waiting for a sailing or getting the patient into condition to make the journey safely.

4. To provide such a mechanism, the following facilities are required: (a) Observation wards in camp hospitals, or in some cases in base hospitals, favorably situated in the training areas where the psychiatrists attached to divisions can examine cases and make recommendations for their disposition. (b) Arrangements for the evacuation to a designated base hospital at a port of all cases requiring emergency treatments, continued observation, or return to the United States. (c) A special psychiatric department in a base hospital at St. Nazaire or Bordeaux (or one at each port if the number of such cases or transportation difficulties should require it.)

Detailed recommendations as to the size, arrangement, personnel, and equipment of such a psychiatric department were inclosed.

By the end of February, 1918, the above general plan of providing for patients with psychoses had been decided upon by the chief surgeon. As has been stated, Base Hospital No. 66 was the first hospital in the training areas to provide a special ward. It was not until July 20 that the neuropsychiatric department at the Base Hospital No. 116 (Bazoilles hospital center) was able to receive patients.¹⁷ It operated continuously until April 30, 1919.

The other main resource for the treatment of mental disease was that provided by the neuropsychiatric department of Base Hospital No. 8, at Savenay. By June, 1918, the new ward buildings to constitute the psychiatric department were well under way.

By June 13, 1918, it was possible for the chief surgeon's office to issue a circular letter giving detailed instructions for the care, evacuation, and transportation of neuropsychiatric patients in the American Expeditionary Forces. This circular is given in full because its paragraphs indicate not only the facilities available for care but also the standards of humanity which from the very first governed the treatment of this class of sick in the American Expeditionary Forces.

CIRCULAR NO. 35.—THE MANAGEMENT OF MENTAL DISEASES AND WAR NEUROSES IN
THE AMERICAN EXPEDITIONARY FORCES

AMERICAN EXPEDITIONARY FORCES,
France, 13 June, 1918.

Absence of the auxiliary civil facilities that simplify the management of mental cases in the Army in home territory and the extraordinary incidence of functional nervous disease

in all armies in the present war have made it necessary to provide special facilities and methods of procedure in the A. E. F. These disorders, by their very nature, interfere with the morale and efficiency of troops in war. Their proper management in the hospitals and organizations in which they first come to notice and their wise disposition and reclassification subsequently will not only increase military efficiency, but, in the case of war neuroses, will tend to diminish to a considerable extent their incidence.

This circular is issued in order that all medical officers may become familiar with the facilities that have been provided for the diagnosis, transportation, and treatment of soldiers with these disorders. These facilities will be modified from time to time as changing conditions necessitate, but the general plan of management here outlined will be followed.

I. Mental cases (insanity, mental deficiency, observation cases).

(a) *Provisions for prompt diagnosis and early care.*

Tactical divisions: Each tactical division in the A. E. F. and in the United States is provided with a psychiatrist whose duty it is, under the direction of the division surgeon, to examine all mental cases coming to attention in the division and to make recommendations for their evacuation or other disposition. The psychiatrist will be detailed from the division sanitary personnel. Their specific duties are defined in Circular No. 5, C. S. O., A. E. F.

They will examine enlisted men brought before general courts-martial as provided by W. D. order of March 28, 1918. They will also examine all other military delinquents brought to their attention, especially those in whom self-inflicted wounds or malingering are suspected. Except under exceptional circumstances, no cases of this kind will be evacuated to the rear until examined by the division psychiatrists. In the case of prisoners accused of crimes the maximum punishment of which is death, the division psychiatrist should, whenever practicable, have the assistance of a consultant in psychiatry.

Base hospitals: A neurologist or a psychiatrist has been assigned to each base hospital or group of base hospitals in the same vicinity. This provision makes it possible for mental cases that first come to attention in such hospitals to receive early diagnosis and treatment and prompt evacuation to hospitals provided with special facilities for their care.

(b) *Provisions for hospital care.*

Advance section, S. O. S.: There has been provided in connection with Base Hospital No. 116 a neuropsychiatric department of 72 beds which will act as a collecting and evacuating point for mental cases from other base hospitals, from tactical divisions, and from training areas.

When observation cases or patients with frank mental diseases or defect are recommended by the division surgeon, upon the advice of division psychiatrists, for transfer to this collecting station, the commanding officer of Base Hospital No. 116 will be notified by telephone or telegraph and will thereupon send a sufficient number of attendants to bring such patients to the hospital in safety. It is necessary, in making such requests, to state the number of patients and the amount of supervision that they will require en route. When practicable, the ambulance service to be established in connection with Base Hospital No. 117 will be employed for this purpose. In all such cases the diagnosis will be "Observation, mental," the type of disease being added in parentheses.

It is very important that mental cases be accompanied by records in which the circumstances under which their condition came to notice are fully stated. It is obvious that, without such information, the medical officers who have the responsibility of dealing with these cases will often have difficulty in arriving at a diagnosis or in making suitable recommendations for their disposition.

Base hospitals in the advance section will transfer to this collecting station all mental cases except those which can readily be retained until sent for by the psychiatric department of one of the base hospitals at a base port and those in whom complications or other reasons render a transfer undesirable. Effort will be made to provide all base hospitals with several nurses or enlisted men of the Medical Department who have had experience in the care of mental cases. With such attendance it will be unnecessary to place guards in observation or mental wards. Commanding officers will protect these cases from the ridicule to which they are sometimes subjected even in hospitals.

Intermediate section: At least one of the large base hospital centers which it is proposed to establish in this section will ultimately have in connection with it a neuropsychiatric department similar to that at Base Hospital No. 116. Hospitals in this section will, in the meantime, evacuate their mental cases to Base Hospital No. 8 in the manner specified in paragraph I (c) of this circular.

Base Sections Nos. 1 and 2: A psychiatric department with a capacity of 152 patients has been provided in connection with Base Hospital No. 8. This and a similar one to be established in connection with a base hospital center in Base Section No. 2 will provide the chief facilities for the classification and continued care of mental cases in the A. E. F.

Base Section No. 3: Mental cases among American troops serving with British organizations will be evacuated to England in the same manner as other sick and wounded from the same organizations. In England a neuropsychiatric department will be provided for the reception, continued care, and classification of cases from British clearing hospitals for mental diseases and from other hospitals in Great Britain.

Base Section No. 4: Any mental cases coming to notice in this section will be evacuated to Base Section No. 3.

Base Section No. 5: Psychiatric wards will be provided at a base port. These wards will receive only cases which have been classified "Class D" at Base Hospital No. 8 and whose condition is such that they can be transported to home territory with the minimum of care and supervision. This ward will receive no other cases but will provide temporary care for soldiers who are found insane upon their arrival from the United States.

Base sections Nos. 6 and 7: Mental cases arising in these sections will be evacuated to a base hospital at the port of Base Section No. 2.

French hospitals: Mental cases that have been evacuated from the front into French military hospitals will be transferred as soon as practicable to the most accessible neuropsychiatric department of an American base hospital center.

(c) Transportation.

The neuropsychiatric department at Base Hospital No. 116 will send for patients to other base hospitals in the Advance Section, S. O. S. and to tactical divisions and training areas as provided in Paragraph I (b) of this circular. The neuropsychiatric departments of base hospital centers to be established in the Intermediate Section, S. O. S. will send for patients in the same manner.

The psychiatric departments of Base Hospital No. 8 and the base hospital center in Base Section No. 2 will send for patients to any base hospital which is nearer to them than to a collecting station.

As mental cases of all degrees of severity can be safely and comfortably provided for at these collecting stations, they will be retained until a sufficient number have accumulated so that they can be evacuated in parties, the attendance being provided by the psychiatric department at the base port to which they are sent. Ordinarily, regular passenger trains will be used, but in special instances and where the number of patients warrants it, transfers will be made in a car set aside for this purpose on an American hospital train destined for a base port to which they are to be sent. In this case, as in all others, attendance will be provided by the psychiatric department receiving the convoy.

Evacuation to home territory of patients classified "Class D" will be made in accordance with special arrangement which it is not necessary to outline in this circular.

(d) Disability boards for mental cases.

Disability boards for mental cases will be convened at neuropsychiatric departments of base hospital centers and at psychiatric departments at base ports. Other disability boards should not pass upon these cases, but should refer them to one of the points at which such boards are authorized. All mental cases to be transported in France will be given the tentative diagnosis of "Observation, mental," except those transported to their final destination on American hospital trains.

Disability boards will be guided by Circular No. 24, C. S. O., 1918, in passing upon mental cases.

II. Functional nervous diseases and concussion cases.

(a) General consideration.

The proper management of these conditions which are commonly included in the designation "shell shock" is regarded by this office as a matter of much importance. This term, which, unfortunately, is being used indiscriminately by medical officers as well as patients, includes a number of different conditions depending upon many different causes and requiring for their successful management several entirely different methods of procedure. Many patients in whom severe concussion symptoms following being blown up by shells or buried in dug-outs can be returned to duty, and it is possible to return a much larger proportion of those cases in which purely psychoneurotic symptoms develop under shell fire or in training, if they are skillfully managed. The return of these cases to their own organizations after a short period of treatment has a very favorable effect in lessening the incidence among their comrades of disorders in the second group mentioned. If, on the other hand, a large proportion of these patients are evacuated indiscriminately to hospitals in the S. O. S. or to home territory, the effect will be to increase their incidence.

For this reason a special hospital for these cases, Base Hospital No. 117, has been established and an ambulance service has been provided in connection with this hospital by which cases can be received directly from tactical divisions at the front. At this hospital the resources found most useful in the British and French special hospitals for these cases are employed. Success in their treatment depends very largely upon the attitude of medical officers generally toward the special problems in diagnosis and management which they present. For this reason regimental medical officers should guard against making an unfavorable prognosis even in cases presenting severe symptoms.

(b) *Treatment.*

Tactical divisions: The advice of the division psychiatrist should be utilized to the fullest extent in the early treatment of these cases in division sanitary organizations and in the selection of cases for evacuation to hospitals in the S. O. S. It will be found advisable, whenever practicable, to receive such cases in special wards in one field hospital and to evacuate cases to hospitals in the S. O. S. only upon the recommendation of the division psychiatrist. This officer will advise with regimental medical officers regarding the management of nervous manifestations when they first come to attention at the front.

Hospitals in the S. O. S. in France: It is expected that a very large proportion of these cases will be admitted directly from their organizations to Base Hospital No. 117 and that relatively few, unless complicated by wounds, gassing or other conditions, will be received in other base hospitals. Other base hospitals will promptly transfer suitable cases to Base Hospital No. 117, except in these instances in which it is thought that they can return directly to duty and those in which the outlook seems so unfavorable, from constitutional neuropathic tendencies or other factors, that their reclassification is probable. Cases in which there is some doubt as to whether an organic or functional disorder is present should be transferred to Base Hospital No. 117. No cases having wounds requiring much surgical attention should be sent to Base Hospital No. 117. All cases in which there is doubt as to the best disposition should be brought to the attention of the consultant in neuropsychiatry for the hospital.

Hospitals in the S. O. S. in England: A special hospital for war neuroses will be provided in England which will be organized and conducted upon the same lines and will perform the same functions as Base Hospital No. 117. American soldiers serving with British organizations will be transferred to this hospital from the British clearing hospital for these cases or from other hospitals in England.

French hospitals: American patients with these disorders in French military hospitals will be evacuated to Base Hospital No. 117 or to the nearest neuropsychiatric department of a base hospital center.

(c) *Disability boards for functional nervous diseases and concussion cases.*

Disability boards for these cases will be convened at Base Hospital No. 117, neuropsychiatric departments of base hospital centers, and psychiatric departments of base hospitals at base ports. No other disability boards should pass upon these cases.

No great difficulties were experienced in putting the provisions of this circular letter into effect except as regards the mental cases. Though medical

officers generally recognized their own lack of experience in the care of mental patients and were willing to transfer them as soon as possible, the transfer of such patients from the forward base hospitals to the hospital center at Savenay presented difficulties not apparent at first glance.

In the first place, not only was the number of enlisted men with training in the care of mental patients very limited but only two American hospital trains (converted French trains) were operating until late in the summer. Thus all the transfers to base ports had to be made on French civilian trains. However, by deferring such evacuations until a number of patients had been collected and having each convoy accompanied by a medical officer and several enlisted men with experience in neuropsychiatry, transportation was accomplished without serious disadvantage to the patients. It is appropriate to record here that during the whole history of the American Expeditionary Forces no patient suffering from a mental disease committed suicide while under treatment, was injured or lost during transportation, and (except in rare instances where methods could not be controlled) no patient being evacuated was subjected to mechanical restraint.

Secondly, there was never at any time a special vessel designated to return neuropsychiatric patients to the United States. They had to be included in the rather limited space set aside for hospital accommodations on the westward trips. Again and again a transport filled its hospital beds with the sick and wounded and found that there was no place left over for neuropsychiatric patients. There was a considerable lack of agreement as to what constituted proper provisions for the transportation of these patients.

Another difficulty arose out of the use of the term "neuropsychiatric" to designate patients requiring such widely different types of provision on shipboard as those with acute mental diseases (psychoses), those convalescent from war neuroses, mental defectives, epileptics, insane prisoners, and patients suffering from organic diseases of the central nervous system. The shortage of shipboard facilities was, of course, only for those in the first category, but all were refused. Then, often, unexpectedly a transport would be willing to receive a large number of mental patients and the population of the 300-bed psychiatric department of Base Hospital No. 8 would be quickly relieved. Congestion, however, was the rule. For this reason the provision of a special hospital at Savenay was recommended by the senior consultant on October 28, 1918.¹⁸

One of the hospitals in the center finally was set aside and opened November 6, 1918, under the designation Base Hospital No. 214.¹³

At Brest a difficult situation was created by the fact that occasionally a convoy of mental patients which had arrived from Savenay for the sailing of a designated transport from Brest was refused by the medical officer of the transport because of the lack of suitable accommodations for them. In such instances emergency provision had to be made in hospitals at Brest which had no special facilities for their care. The outgrowth was a development of a special department at Base Hospital No. 65, at the Kerhuon hospital center, at this base port.¹⁹ This department became one of the most effective and useful neuropsychiatric resources in France.

DURING THE ARMISTICE

Just before the armistice was signed the chief surgeon directed the senior consultant to submit a full statement as to the adequacy of existing hospital accommodations for neuropsychiatric patients in the Services of Supply, with a statement of the additional provisions already under construction or agreed upon and any expansion required. This report is given below in full, because it provides an excellent summary of the situation as it existed a few weeks before the armistice was signed:²⁰

SPECIAL HOSPITAL PROVISIONS FOR MENTAL AND NERVOUS CASES IN THE S. O. S.

Bazoilles center:

Present provisions—

Psychiatric department of Base Hospital No. 116; in seven buildings, including quarters for nurses and enlisted personnel.

Capacity: 72.

Serves as collecting station for mental cases from tactical divisions and all hospitals in advance section east of Troyes.

Disability board for neuropsychiatric cases.

Under construction or agreed upon—

None.

Expansion recommended—

Addition of three ward buildings of type known as "general wards" in present department and enlargement of present nurses' quarters.

Proposed capacity: 150.

La Fauche:

Present provisions—

Base Hospital No. 117 (for war neuroses) consisting of a standard camp hospital, and a small chateau which is used for officer patients.

Village used for billets for medical officers. A dwelling rented for nurses' quarters.

Four French barracks, a mile from hospital, constitute convalescent camp. Disability board for neuropsychiatric cases.

Capacity: Hospital.....	405
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Convalescent camp.....	125
------------------------	-----

Total.....	530
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Receives war neuroses from Army neurological hospitals and all base hospitals in American Expeditionary Forces.

Under construction or agreed upon—

Buildings to bring capacity of hospital to 2,000 beds under construction.

Recommendation made to erect buildings for second 1,000 beds on site now used for convalescent camp.

Expansion recommended—

None after completion of buildings now under construction. Tentage can be added in spring to bring convalescent camp to 2,000.

Proposed capacity: Hospital.....	1,000
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Convalescent camp.....	1,000-2,000
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Allerey Center:

Present provisions—

None.

Under construction or agreed upon—

Plans for a neuropsychiatric department not of the standard type have been submitted by the Engineer's Department. Recommended that psychiatric department of Base Hospital No. 116 at Bazoilles center be duplicated here, and the department thus established serve as collecting station for mental cases for the northeastern part of the intermediate section. Disability board for neuropsychiatric cases recommended.

Allerey Center—Continued.

Expansion recommended—

Same as for Bazoilles center, when needed.

Proposed capacity: 150.

Mars Center:

Present provisions—

None.

Under construction or agreed upon—

Recommended that a psychiatric department of 250 beds consisting of an adaptation of "A" type base hospital be constructed as soon as possible on site already suggested by center commander. Plan submitted to C. S. O. this date for such a department and for expansion proposed.

The fact that large hospital centers and several depot divisions are near this center make it desirable to centralize the work of observation and collection of mental cases which will otherwise have to be done in small observation wards at base hospitals in the neighborhood and at camp hospitals in depot divisions (as at St. Aignan). Disability board for mental and nervous cases recommended.

Expansion recommended—

Increase of psychiatric department to 500 beds, when needed.

St. Aignan-Noyer:

Present provisions—

Psychiatric wards operated as branch of Camp Hospital No. 26, First Depot Division, in a convent in St. Aignan. Used chiefly for observation of mental cases. Important when all replacements to American Expeditionary Forces came through the First Depot Division, but less so now.

Capacity: 114.

Under construction or agreed upon:

Disability board for neuropsychiatric cases recommended.

Expansion recommended:

None. When proposed psychiatric department at the Mars center is ready to receive patients, these wards may be abandoned.

Base Section No. 1:

Present provisions—

Psychiatric department of Base Hospital No. 8 at Savenay, partly in buildings of special design and partly in other wards of hospital. This department receives and "boards" practically all mental cases and many nervous cases who are subsequently returned to the United States. The increase in population is shown by this table:

	Admitted	Returned to U. S.
July-----	405	348
August-----	588	601
September-----	887	585

Under construction or agreed upon—

Additional buildings being constructed but wards are now widely separated, personnel is confused, and the provisions for insane officers are unsatisfactory. It is thought by all desirable to operate this very important department as a separate hospital unit in the Savenay center. The center commander has suggested a unit nearing completion for this purpose. Recommended that a unit of 1,000 beds now about completed be occupied as soon as possible by personnel to be supplied by Psychiatric Replacement Units Nos. 1 and 2. The buildings now used by the psychiatric department can be used to advantage for other purposes.

Expansion recommended—

The psychiatric base hospital recommended above to be enlarged only as absolute necessity demands.

Although the armistice put an end to battle casualties, thus eliminating one great increasing demand for hospital beds, the hospital problems of the American Expeditionary Forces were not immediately reduced in their size

or complexity. The necessity for beds for neuropsychiatric patients increased for a time instead of diminished, and congestion of such patients at Savenay hospital center because of delay in transferring them to the United States, became very serious. One of the results of the delay in the transfer of these patients was to imperil recovery in many of the lighter types of depression that had occurred in men exhausted by the severe fighting of the fall. This situation was brought to the attention of the chief surgeon, A. E. F., by the senior consultant in neuropsychiatry, in November, 1918.²¹

A number of the more recent cases showed simple depression, in some instances only slightly beyond physiological limits but, nevertheless, accompanied by painful ruminations and often by suicidal ideas. An intense longing for home was characteristic of this condition. It resembled a set of reactions to which the term "nostalgia" used to be applied and is common in all military expeditions when a period of intense activity is succeeded by an uneventful one.

The cessation of hostilities made it necessary to modify plans for the care of neuropsychiatric patients. It was upon the following letter from the senior consultant to the chief surgeon, A. E. F., that the neuropsychiatric work during the armistice, except in the army of occupation, was based:²²

1. The cessation of hostilities and the proposed decrease in the number of expeditionary troops necessitate radical changes in plans for the care of neuropsychiatric cases in the American Expeditionary Forces.

2. The most convenient method of presenting these changes is to consider them with reference to the following three groups into which practically all neuropsychiatric cases in the American Expeditionary Forces fall: Injuries to the central nervous system and peripheral nerves; psychoneuroses, chiefly those termed "war neuroses"; mental diseases (insanity, mental deficiency, etc.).

INJURIES

The possibility of further admissions to this group terminated with the armistice. In civil accidents—such as will continue in the American Expeditionary Forces—such injuries are very rare. The whole problem of dealing with injuries to the central nervous system and peripheral nerves is their diagnosis and management pending their return to the United States for continued treatment.

The neurosurgeons having decided that all such cases should be returned to the United States before operation, it is important that every effort should be made now to see that each patient with a wound in which injury to the brain, cord, or peripheral nerves may exist receives a careful neurological examination and that accurate notes of such examination be made on the clinical records. It is not sufficient to examine only cases brought to attention by surgeons but all cases should be seen. Negative notes will often prove of as much value in the future management of these cases as positive ones.

There are many instances in which a functional element, or a "functional overflow of symptoms" as it has been called, complicates cases in whom organic injury exists. To determine the existence and extent of this complication requires a careful examination by one experienced in the diagnosis of functional as well as organic conditions. Neuropsychiatrists in the American Expeditionary Forces have had unusual opportunities of seeing functional disturbances among soldiers. It is important, therefore, that their opinion should be recorded in all such cases before sending them home. It can readily be seen that neuropsychiatrists and neurosurgeons in the United States may be misled by the disappearance or modification of functional symptoms when cases arrive at hospitals at home unless careful examinations and clear records have been made in the hospitals of the American Expeditionary Forces.

With these considerations in mind, thousands of careful examinations of the wounded have been made by neuropsychiatrists in base hospitals in the American Expeditionary Forces. Now a general survey with reference to neurological injuries is being undertaken.

In every base hospital center this work is being pushed by additional personnel under the direction of the consultant in neuropsychiatry for the center. Not only will positive findings be recorded but in all negative cases the clinical records will be stamped "Neurological examination negative."

It is realized that the rapid evacuation of patients toward base ports can not be delayed for such examinations and that many patients will not be reached. To meet this situation a number of young and energetic neurologists have been sent to Savenay, Brest, and Bordeaux. At these ports, through which all the wounded must flow, efforts will be made to examine all records and as far as possible to examine all cases in which a previous examination was not recorded. Three very experienced officers have been assigned to these ports as consultants in neuropsychiatry to supervise this work.

In about six weeks the work outlined above should be completed. The medical officers engaged in it may then be returned to the United States.

PSYCHONEUROSES

It is estimated that the incidence of these disorders will be decreased not less than 90 per cent through the cessation of hostilities. The remaining 10 per cent will continue to be contributed in the future as they have been thus far, by the factors responsible for psychoneuroses in civil life. Military experiences other than the hardships and danger of actual warfare will tend to make psychoneuroses not less prevalent in the American Expeditionary Forces than among a body of men of the same age periods in civil life.

Accompanying the decreased incidence of the psychoneuroses will be a greatly increased recovery rate among those remaining under treatment. It is estimated that among the 465 cases remaining unclassified at Base Hospital No. 117 on November 25, as many as 410 will be discharged to duty.

As nearly as can be estimated, about 200 cases are now in other base hospitals. Steps are being taken to have these cases sent to Base Hospital No. 117 at once. It is very desirable that they should be restored as soon as possible and not returned to the United States still suffering from functional nervous disorders. Spreading the information that this will not be done has already promoted recovery. It is apparent that Base Hospital No. 117 will have seen less than 200 patients, and that with this number of beds all new admissions to be expected can be provided for. As it is uneconomical to maintain a separate hospital for this number of patients and it is perfectly useless to send these cases to general hospitals, it is recommended that all cases of functional nervous disease be cared for in the neuropsychiatric hospital considered under the heading "Mental diseases" in this letter.

MENTAL DISEASES

The elimination of danger, hardship, and exhaustion as causes of mental disease will tend to decrease the number of admissions in this group. The number of mental defectives coming to notice will be diminished on account of the inevitable lowering of standards of mental fitness in troops not required to do combat duty. (Many mental defectives used to come to attention on account of their inability to put on gas masks or perform outpost duty.) To offset the effect of these causes of a substantial decrease in the admission rate for mental cases, are the lengthening period of service and absence from home, disappointment over not returning immediately and the unavoidable impairment of morale that will result when a combatant army becomes one of the occupation. It is predicted that mental cases will continue to be admitted at an annual rate of 3 per thousand enlisted strength—about three times the civil rate for adult males.

The present provisions for the insane of the American Expeditionary Forces are inadequate. The collecting station provided by the psychiatric department of Base Hospital No. 116 at Bazoilles has been of much value. It should be continued as well as the wards now set aside at the Allerey and Mars hospital centers, as these centers are within easy reach of the areas in which the troops are quartered. Mars is a particularly favorable location as it is at the point of divergence for the three base ports. A similar ward should be maintained at Bordeaux and one at Brest for convenience in embarking mental cases and for the collection of new cases from the troops in the vicinity. All these wards are being adequately staffed from the personnel now available. In addition officers and enlisted men are being congre-

gated at the three base ports so that they can be detached to accompany convoys of mental patients home.

The chief provision for mental cases should continue to be at Savenay or Nantes. These places are nearest the most convenient port and also nearest to the points from which cases will be collected and afforded temporary care. The problem of caring kindly and skillfully for mental cases from the American Expeditionary Forces will have to be met at one of these points as long as there are troops in France. When the pressure of caring for the wounded submerged everything else it was out of place to dwell upon the kind of care provided for mental cases. Now, however, it would seem that the matter could be taken up seriously. Insanity is not an occasional occurrence among troops but one of the most important diseases in an army in peace as well as war. It should be provided for not as an emergency but as one of the routine tasks of the medical department of an army.

Although no country has higher standards than the United States in the care of mental disease, the care of the insane at the present time at Savenay is below that seen in any British or French military hospital for mental diseases. Base Hospital No. 214 is a base hospital only in name. It was created by giving this designation to the overcrowded wards already occupied by the mental cases, without any provisions for personnel, administration, or treatment being added. The capacity of these wards was rated at 400 by giving up all rooms intended for special patients, for the isolation of special classes, or for day rooms. The enlisted personnel is away from the unit altogether at night although this is a practice full of danger when mental cases are cared for. The personnel on night duty should always have assistance at hand in case of emergency. Only 13 nurses are available for the care of 560 patients. Thirty nurses were assigned to this department when the personnel of Base Hospital No. 117 arrived in France in June. Although these nurses were all especially trained in the care of mental diseases, having been enrolled in the United States for that purpose, they have been assigned to other work in other hospitals.

The remedy for the conditions under which the insane of the American Expeditionary Forces are cared for is to provide at Savenay or at Nantes a separate neuropsychiatric base hospital capable of caring adequately for all mental cases, with proper classification and provision for the relatively large number of insane officers, and for the psychoneurotic cases after Base Hospital No. 117 has been discontinued. No special provisions other than those which can be extemporized by a staff of the hospital are required. It is necessary, however, that such a hospital should be recognized as a necessity and not a temporary expedient and be permitted to develop the special methods of treatment and care needed even in the short period in which mental cases are provided for here. A very large proportion of the mental cases now coming to light are recoverable. Many can be transported to the United States with much less danger after a short period of treatment here and in not a few the difference between permanent mental disease and prompt recovery will depend upon what is done for them in that short period. The wards at Savenay constitute nothing but a place of detention now.

By January 14, 1919, certain further modifications were necessary and Circular No. 35, quoted above, which had provided the official authorization for a large proportion of the neuropsychiatric work in France, was superseded by Circular No. 35-A:

CIRCULAR LETTER No. 35-A

AMERICAN EXPEDITIONARY FORCES,
January 14 1919.

From: The Chief Surgeon.

To: C. O.'s all base, camp and evacuation hospitals, hospital centers, surgeons of armies, corps, divisions, and sections, and the surgeon, district of Paris.

Subject: Mental and nervous cases.

MENTAL CASES

1. The directions of Circular 35, O. C. S., June 13, 1918, that relate to the care and evacuation of mental cases (insanity, mental deficiency, epilepsy, observation cases) are modified as indicated below.

2. Psychiatric departments for the reception, observation, early treatment, and evacuation of mental cases are now in operation at the following hospital centers:

Hospital center, Bazoilles.

Allerey.

Mars.

Kerhnon, Brest.

Savenay.

Beau Desert, Bordeaux.

District of Paris, Camp Hospital No. 4, Joinville.

3. All mental cases will be sent to the psychiatric department most accessible in the manner indicated in Circular 35. It is important that proper attendance be provided in all cases to prevent accidents during evacuation. Unless special circumstances make other arrangements more advantageous, such attendance will be supplied by the psychiatric department to which patients are being sent. No stigma attaches to admissions to these departments and they should be freely used for observation in all doubtful mental conditions.

FUNCTIONAL NERVOUS CASES

4. Patients with functional nervous diseases (psychoneuroses, war neuroses) will be sent, in the first instance, to the nearest base hospital and thence to Base Hospital No. 214, at Savenay, which has a special department for psychoneuroses. Attendance will be provided for these cases only when there is some special reason for it. They will not be sent to psychiatric departments at hospital centers.

RECORDS

5. In Section I, paragraph (b) of Circular 35, O. C. S., June 13, 1918, the following statement is made regarding records of mental cases:

It is very important that mental cases be accompanied by records in which the circumstances under which their condition came to notice are fully stated. It is obvious that, without such information, the medical officers who have the responsibility of dealing with these cases will often have difficulty in arriving at a diagnosis or in making suitable recommendations for their disposition.

These instructions are being generally neglected with the result that the work of the medical officers in the psychiatric departments is unnecessarily rendered more difficult. Mental cases come from divisions with no record except their diagnosis cards. In some cases these patients have had general court charges preferred against them without notations to indicate it. Others have made suicidal attempts or threats, but without any record of these facts they can not be properly classified until observation at the hospital has revealed them.

6. Disability boards will not reclassify mental cases or those with psychoneuroses. This will be done by the neuropsychiatric disability boards which have been established at each psychiatric department and at Base Hospital No. 214 (neuropsychiatric hospital).

WALTER D. McCaw,

Colonel, Medical Corps, Chief Surgeon.

PERSONNEL

OFFICERS

SOURCES

When the neuropsychiatric service was organized in the American Expeditionary Forces medical officers with neuropsychiatric training were widely scattered among the organizations there; but the names, assignments, and qualifications of those available for professional work in the field had been ascertained by the senior consultant in neuropsychiatry. This was done by examining the personnel records in the chief surgeon's office and by correspond-

ence with commanding officers of the base hospitals and with division surgeons. By the end of January, 1918, the location of about 20 such officers had been ascertained and they had been graded into the following three groups with reference to their training and experience: (a) Those who could be intrusted with important duties in their specialty without supervision. (b) Those who, on account of their less thorough training or other reasons, could be utilized as assistants but not placed in charge of the work to be performed independently. (c) Those who had had so little experience and training that it was inadvisable to use them as specialists.

The most fruitful sources from which these officers were obtained were base hospitals organized from important medical centers in the United States which had come overseas shortly after war had been declared by us. Each of these hospitals had as a member of its staff a neuropsychiatrist who, in many instances, had been professor of neurology and psychiatry in the university and a director of those services in the teaching hospital at home from which the military hospital had been organized. Other sources were the medical officers studying the treatment of war neuroses in England and those scattered throughout various organizations where special training could not be well utilized. Plans were made at once to have these officers reassigned to posts where they could be most useful. It was from the seven officers on duty in England that the first four division psychiatrists, the first commanding officer of Base Hospital No. 117, and its first medical director were obtained. An effort was made also to secure a roster of nurses and enlisted men who had had experience in the treatment of mental patients.

During March, April, and May, 1918, with the advent of many additional base hospitals from the United States and the construction of hospital centers, the organization of the professional services in hospitals in accordance with the general plan which formed the basis for Circular No. 2, chief surgeon's office, A. E. F., November 9, 1917, became necessary.^c It was not difficult to make the reassignments required to provide consultants in neuropsychiatry for nearly all hospital centers. As the personnel to staff new hospitals arrived from the United States the neuropsychiatrist attached to each was communicated with or visited by the senior consultant in neuropsychiatry and the general plan for the care, treatment, and evacuation of mental and nervous patients explained to him. Such officers differed in their special experience and training and reassignments were made so that, in general, younger men could be detached to serve with troops and those qualified for particular tasks could be assigned to them.

The personnel was augmented continually from newly arrived tactical divisions and hospital units, each with its attached neuropsychiatric specialists. An unexpected increase in personnel was due to the fact that evacuation hospitals arriving after the first of August, 1918, each had a neuropsychiatrist attached.²³ Since it was not practicable for such officers to perform very useful work in the evacuation hospitals under the plan of action in the theater of

^c Consult Chap. XVIII, Vol. II, of the history for full details concerning the professional services, A. E. F.

operations, they were immediately detached and made available for other duties. All these sources, however, were inadequate to meet increasing needs, consequently there were organized in the United States two neuropsychiatric replacement units of officers, nurses, and enlisted men, all not only with civil experience in neuropsychiatry but, by that time, with a good deal of military training.²⁴ Upon their arrival in France they were immediately distributed to the different stations in most urgent need, thus increasing very greatly the usefulness of available neuropsychiatric facilities. There were certain losses of personnel, fortunately, however, few through death or illness. In order to meet the need for better care during ocean transportation, officers and enlisted men with neuropsychiatric training were detached from the American Expeditionary Forces to accompany home convoys of mental patients. Few of these officers or enlisted men returned. It was also necessary to release a few officers for general work because they had shown lack of aptitude for the highly specialized tasks that they were called upon to perform. On the other hand, the high administrative capacity of many neuropsychiatrists who had held responsible positions in civil life made their services sought after for executive posts in the American Expeditionary Forces.

TRAINING

The neuropsychiatric work of the American Expeditionary Forces covered such a wide field that it was possible to make assignments with reference to the special types of training and ability which medical officers possessed. In general those whose training had been chiefly psychiatry were assigned to tactical organizations and to hospitals and departments established for the care of mental patients, while those whose training had been chiefly neurologic served as consultants in general base hospital centers. Although it was one of the outstanding features that neurologists and psychiatrists shared each other's duties, responsibilities and point of view to an extent that had never existed in civil life, and that the new terms "neuropsychiatry" and "neuropsychiatric" came to have ample justification for their use, it was true, nevertheless, that relatively few medical officers possessed equal qualifications in both these fields. Psychiatrists who had had years of excellent training and experience in dealing with mental diseases, psychoneuroses and conduct disorders did not possess the background of neuroanatomy, neuropathology, and clinical neurology required to deal with the organic injuries and diseases of the brain, spinal cord, and peripheral nerves that contributed so many interesting and perplexing questions in diagnosis and treatment in the base hospitals. On the other hand, many neurologists had devoted themselves so exclusively to these subjects that they were insufficiently prepared to care for patients with acute mental diseases and to apply with much conviction some of the psychological viewpoints upon which the treatment and prevention of the war neuroses were largely based. During the strenuous weeks that intervened between the unexpected entry of the American divisions into active fighting in May, 1918, and the armistice, little time could be given to formal medical training. It was intended to remedy this defect during the winter when neurological training would be afforded for

psychiatrists and psychiatric training for neurologists. In the specialists arriving late in the summer and fall of 1918, however, there was striking evidence of results of the breadth and soundness of the training that had been carried on in the United States in the courses offered at the various neuropsychiatric centers such as the Michigan Psychopathic Hospital, Ann Arbor, Mich.; Boston State Hospital; Neurological Institute, New York City; Philadelphia General Hospital; Phipps Psychiatric Clinic, Baltimore, Md.; Government Hospital for the Insane, Washington, D. C.; Manhattan State Hospital, New York City.²⁵ These men were indeed neuropsychiatrists; others would have been had those who came to the American Expeditionary Forces early in its existence had the opportunity during the winter of 1918-19 to avail themselves of similar educational opportunities. Regular courses for medical officers, nurses, occupational aides, and enlisted men were established at Base Hospitals No. 117¹⁰ and No. 214.¹³ A two weeks' course was arranged at American Red Cross Hospital No. 1 at Paris where, with the cooperation of French neurological clinics, there was an excellent opportunity for the study of brain and peripheral nerve injuries.

ASSIGNMENT

From the beginning the chief surgeon trusted the senior consultant in neuropsychiatry, as was the case with other senior consultants, to make such recommendations as were needed to use the neuropsychiatric personnel to the best possible advantage. Almost without exception, the recommendations of the senior consultant in neuropsychiatry were promptly put into effect by an official order. There was, unfortunately, one important obstacle—the refusal of commanding officers to grant their approval. Entirely in the interests of harmony and cooperation, the senior consultant had established the custom of asking commanding officers in advance if they would approve his making such recommendations. It was apparent that the special work for which he was directly accountable to the chief surgeon would fail if this custom was continued and if small needs rather than larger issues governed the distribution of personnel. On July 28, 1918, the senior consultant brought this important matter to the attention of the director of professional services,²⁶ whereupon he was given practically free disposition of the neuropsychiatric personnel, and no further difficulties, such as those outlined above, were experienced.

PSYCHIATRIC NURSES

As explained in Section I of this volume, the National Committee for Mental Hygiene, at the request of the Surgeon General of the Army, secured a large part of the neuropsychiatric nursing personnel for the Army. In the original selection of these nurses, made in the first year of America's participation in the war, only persons were selected for psychiatric nursing service in the American Expeditionary Forces who had had training and experience in caring for nervous and mental cases. Applicants were investigated carefully and only those highly recommended for the service were accepted. After extensive correspondence and other lines of inquiry a group of 46 nurses finally was obtained for duty in the American Expeditionary Forces.

Until June 8, 1918, when the first contingent of specially obtained nurses arrived in France,¹⁰ neuropsychiatric nursing in the American Expeditionary Forces was done by a few nurses selected from among the general nursing personnel. These were usually women who had had previous experience in special hospitals for nervous and mental diseases, or in wards for these cases in general hospitals. In addition to the 46 nurses referred to, 20 more were added to the unit at the time it sailed for France. These 66 nurses were assigned for the most part at Base Hospital No. 117, but some were left at Base Hospital No. 8, at Savenay, and others were sent to psychiatric departments of hospital centers throughout France.

After the arrival of the unit designated Base Hospital No. 117, neuropsychiatric nursing was taken over as much as possible by specially trained nurses. Throughout the summer, the neuropsychiatric nursing personnel was increased in number by the addition of those sent from the United States in two psychiatric replacement units.

LIAISON WITH THE DIVISION OF NEUROLOGY AND PSYCHIATRY, SURGEON GENERAL'S OFFICE

Liaison with the division of neurology and psychiatry in the Surgeon General's Office was maintained by personal communication in the form of letters and cables between the chief of the division of neurology and psychiatry, in the Surgeon General's Office, and the consultant in neuropsychiatry, A. E. F. This informal method was first approved by the chief surgeon but the restriction of censorship was a formidable barrier.

One of the most valuable aids which the neuropsychiatric work in France obtained during the war came through the visit made by the chief of the division of neurology and psychiatry in the Surgeon General's Office. His temporary assignment to the American Expeditionary Forces was recommended by the senior consultant to the chief surgeon, A. E. F., on June 18, 1918, in the following letter:²⁷

1. The extensive plans being made in the United States for continued care and social and industrial rehabilitation of disabled returning soldiers do not in all cases provide for direct continuity between management here and at home. It is essential that those responsible for this work in the United States be closely in touch with what is done here and familiar with the views of those who care for our soldiers during the earliest phase of their illness or disability.

2. This is particularly true in the case of the war neuroses and of some forms of mental disease. In their thousands of chronic nervous invalids resulting from the war—most of them young men—England and Canada have medical and social problems that will remain unsolved long after the war has ended. The presence of these men in the homes and in the industrial and social life of the community cannot fail to affect unfavorably the mental health of those who are in daily contact with them. The gravity of this situation is now being recognized and the Military Commission of Pensions in England and the Military Hospitals Commission in Canada are making belated efforts to bring again under treatment, with the object of reclaiming them, the thousands of soldiers who were discharged from the army before they had received adequate treatment and who in consequence remain unrecovered.

3. These considerations indicate the need for the closest liaison between this office and the division of neurology and psychiatry in the United States, especially since the Surgeon General's Office has become the rallying point for the many official and unofficial agencies that have interested themselves in the various phases of reconstruction work among soldiers. It

is suggested, therefore, that it be indicated to the Surgeon General that it would be agreeable to have Col. Pearce Bailey ordered to France and England for a short period of observation of neuropsychiatry work in expeditionary troops.

4. It is believed that nothing will contribute more to close cooperation in this field than the personal contact with the actual problems in mental medicine in the American Expeditionary Forces that such a tour of duty would provide.

The medical officer concerned visited England first and spent July, August, and part of September in the American Expeditionary Forces. He was able to visit the French neuropsychiatric hospitals and training centers which the senior consultant in neuropsychiatry, A. E. F., had been unable to see on account of a great pressure of work. The report to the chief surgeon which the chief of the division of neurology and psychiatry rendered, September 5, 1918, on his observations, with his recommendations for the American Expeditionary Forces, is as follows:

MANAGEMENT OF WAR NEUROSES BY THE FRENCH

Connected with each army the French have a neurological center which has a capacity of from 100 to 200 beds. The capacity should be in the ratio of 1.5 beds to 1,000 troops. This army center is located or should be located with one or two hours motor transport distance from the front. It has three medical officers who have had experience at the front.

The patients, transported as promptly as possible after the development of symptoms, are placed first in a receiving ward where they are carefully examined and then sent to different wards, classified as far as possible in relation not only as to their injury but also as to their personality, the hysterical and malingering types being kept apart from the others.

The character of the disabilities varies with the activity of the sector which the center serves. For example in quiet sectors these centers receive large numbers of cases of rheumatism, sciatica, etc., while in active sectors the true commotionné cases are in the majority.

The method of treatment and management varies with the class of cases. The true commotionné is treated with all sympathy and kindness. He is kept in bed until he feels able to get up, which is generally within a week, and is then treated as a convalescent until he leaves, which is ordinarily within two or three weeks. Quite a different course is taken toward the émotionné, or toward the commitionné who shows signs of developing neurotic symptoms. Such a patient is given to understand at once that such symptoms as trembling, failure to move a limb or portion thereof, deaf mutism, etc., are not symptoms of disease but rather failure in will, a defect in character, that persistence in the demonstration will cause the man to be regarded as a malingerer, which will eventuate in his punishment, perhaps by court-martial. Two forms of punishment are available to the neurologist at the center itself. One of these is the threat that the "permission" or leave, to which every French soldier is entitled after discharge from the hospital, will be taken away from him if he persists in functional symptoms. He will not be allowed to go home, he is told, but will be returned directly to the front. The other form of punishment is solitary confinement. The soldier presenting hysterical symptoms is put in a room by himself, locked in, and is not permitted to read, write, or smoke. He is told that the trouble with him is in his will and that the best way to recover the will is by silently reflecting in the dark. In addition to these means of combating the outbreak of hysterical symptoms, electricity with persuasion is used or the rougher quick method of suddenly turning on strong electric currents in the region of the part showing signs of defaulting function. By these various measures the French maintain that it is not necessary to send many functional cases back to the interior. Certain cases of true commotionné who do not recover in the army centers are sent to the interior for further treatment or convalescence. All organic cases are evacuated to the interior as rapidly as possible.

Different methods are required in the neurological centers of the interior than of the advance. The medical point of view regarding the neuroses is no different, but the patients are under a less rigid control than in the army centers and more easily accessible to their

friends, to civil inspection, etc. The neurological centers of the interior are organized as regional, there being 20 regions in France. These centers are complete neurological hospitals, with wards for organic as well as for surgical cases. In some centers, as at Besancon, the surgical cases are sent to another hospital for operation. In others, as at Lyons, the center has a surgical service of its own.

The management of the neuroses in these interior centers varies considerably with the personality of the director. As a rule, while there is no different point of view regarding the neuroses than is entertained in the army centers, the brusque methods employed near the front have been found less practical in the regional centers. Relaxation of discipline, proximity of friends, popular disapproval, etc., explain this. Torpillage, or the sudden electrification of affected part, is still made use of and is said to produce immediate cure, but may bring the physician who employs it into trouble.

The most successful of these interior centers, as far as the neuroses are concerned, is the one at Salins. It is remote. The patients are carefully prepared by various suggestions before they are treated. This stage of preparation is extended for several days or weeks, the patients being kept as much as possible in company with patients who have already been cured. The treatment itself, consisting of persuasion with mild faradization, is completed at one sitting, the sitting requiring from a few minutes to several hours. When the local hysterical manifestation is removed the patients are held in the center for two or three weeks, are daily encouraged and made to do exercises and are also made to do such work as farming and carpentry.

The organization at Salins is very carefully thought out and skillfully conducted, but not the least good point about it is the military training which follows the cure. This is conducted at a camp at the foot of the mountain peak where the hospital is located. The camp is under the command of a captain of infantry, wounded and not fit for field service, who is in full sympathy with the physician of the hospital. The patients on coming from the hospital are grouped in accordance with their capacities. About two-thirds are drilled with arms and are trained again for full field service. The balance, who will only see service at the rear again, are given hikes and calisthenics. To the evident advantage of training as an after cure the camp offers the physician the opportunity of seeing his graduates daily, of watching their progress in resuming their military careers, and in immediately becoming cognizant of relapses. These occur not infrequently in the camp and then the patient is taken up on the mountain again and is put in solitary confinement before being re-treated. Second relapses are said to be exceedingly rare.

It would seem that the training camp, under the command of a well-selected line officer, offers the only means of accurate classification of cases of neuroses which have been hospitalized. Unless patients of this class are tried out for several weeks before they are sent to line duty great errors in the evaluation of their capacity are bound to occur. And if they are returned a second time from full duty the chances for their complete restoration are very poor.

The French method of handling the neuroses of war has doubtless been of great service not only to the army but also the patients themselves. As far as the army is concerned, a very large percentage has been returned to the line. It is true that many are still to be found in the interior hospitals who have resisted the treatment of the army centers, but these are still in the military service and so even now have a better chance of recovery than if they had been discharged from the army. Even cases of long standing, of two or three years, are successfully treated and returned at Salins. It is not true that these patients recover when discharged from the army, in the sense that the condition was due to a wish to be out of the war. The many disabled neurotics among discharged British soldiers teach quite the contrary.

SUGGESTIONS FOR AMERICAN EXPEDITIONARY FORCES

Everything seems to point to our soldiers developing neuroses to a degree even greater than has occurred among the British unless special means are taken to prevent. The conditions of American life have been such that a young man suddenly taken from surroundings where he more or less always had his own way, where obedience was never necessary, where he was taught that he was the equal of every one, suddenly taken from surroundings of that

character and forced to obedience, forced also to face all this war has of horror, it would not be surprising if he showed his reaction to the change by developing a neurosis if he were given a chance. French neurologists with whom I have talked have spoken of the excessive nervousness of American soldiers who have been under their care.

It would seem then that we should profit as far as we can from the experience of the French in this matter. Check the development of neurosis by denying its existence at the start. Each army should have its own center of a capacity of at least $1\frac{1}{2}$ beds to each 1,000 troops. It should keep its patients two or three weeks if necessary, and should be entirely independent of any hospital of the communication or base.

The treatment of the patients should be calmativ and restorative and any appearance of such symptoms as tremors, paralysis, etc., should be rigidly discouraged. This idea should run through the whole personnel of the hospital. At first it should be effected by gentle persuasion, but if the patients persist in the production of hysterical symptoms sterner measures should be resorted to. It is not considered desirable to send patients of this class to convalescent camps. It would be better for them to have leaves, and the threat to cut off the leave might persuade many to suppress the self-indulgence which is so often the neurosis and give up his symptoms. Isolation and strong faradization might also be employed with advantage at this stage.

Those patients should be held at the army hospital with the greatest tenacity. The chances of their permanent military recovery is reduced the moment they are sent back. It is strongly recommended that none of this class be returned to America until after the war. The influence of the home country would make it extremely difficult to organize a hospital service where these cases could be properly treated, and there would be small hope of ever fitting the patients again for military duty. And the fitting for military duty is the one means of effecting a satisfactory cure. A neurosis which has lasted for a year or more has established a habit which persists, or is prone to, after the cause is removed. This is shown by the numbers of permanently (or apparently permanently) disabled men to-day, discharged from the army in England and Canada.

DISABILITY BOARDS

Following the promulgation of General Orders, No. 41, G. H. Q., A. E. F., March 14, 1918, which governed the physical classification of the personnel of the American Expeditionary Forces, it proved necessary to have special procedures in the care of officers and men suffering from mental and nervous diseases. Accordingly, on April 23, 1918, the chief surgeon, A. E. F., issued the following circular letter:

CIRCULAR No. 24

AMERICAN EXPEDITIONARY FORCES,
France, April 23, 1918.

Disability boards passing upon mental and nervous cases under Sec. I, G. O. 41, G. H. Q., A. E. F., March 14, 1918, will, as far as practicable, be governed by the following considerations.

GENERAL

In dealing with these cases, there should be borne in mind their chronicity, the probability of recurrences or acute episodes in constitutional disorders, and the bearing which abnormal mental states have upon questions of responsibility. The special mental stresses of modern warfare and the fact that the safety of many soldiers often depends upon the conduct of one of their number should be given due weight in considering the fitness of men with mental or nervous diseases for service at the front. At the same time the importance of utilizing, in any safe and suitable way, the services of men partially incapacitated should not be overlooked. The essential question for boards to decide is usually whether, taking all the facts into consideration, the individual before them will be an asset or a liability to the Expeditionary Forces. Whenever possible a psychiatrist or a neurologist should act as one member of a board passing upon mental cases.

PSYCHOSES (INSANITY, MENTAL ALIENATION, MENTAL DISEASES)

All officers and enlisted men in whom frank psychoses exist should be marked "D" and returned to the United States as soon as this can be done without injury or endangering their chances of recovery. It will often be advantageous to hold these cases in the psychiatric departments of base hospitals at base ports until acute and severe manifestations have passed or, in cases of an especially favorable type, until recovery has taken place, but it should not be made the practice to provide extended treatment in hospitals in the American Expeditionary Forces.

In exceptional cases where it seems desirable to depart from the rule of returning to the United States soldiers who have or who have had psychoses, the patients may be classified "B," and the special considerations which make a departure from the rule desirable must be noted on the report card.

MENTAL DEFICIENCY (FEEBLE-MINDEDNESS, DEFECTIVE MENTAL DEVELOPMENT)

The existence of a readily demonstrable degree of mental deficiency should almost invariably be sufficient reason for not classifying soldiers as "A," but it should by no means be regarded as sufficient reason in itself for placing them in class "D." In recommending mentally defective soldiers for duty in labor organization at the rear, especial weight should be given to good physique, emotional stability, and freedom from such delinquent traits as alcoholism, dishonesty, nomadism, and the like. Military delinquents, of whom the mentally defective constitute a large proportion, are a source of almost as much noneffectiveness as illness and it is important that the Expeditionary Forces should not be burdened with their care and supervision. Defective delinquents should always be classified "D."

CONSTITUTIONAL PSYCHOPATHIC STATES

In making recommendations as to the disposition of soldiers found to have constitutional psychopathic states, the considerations mentioned under the preceding heading should govern. It should be remembered that many individuals with volitional defects are amenable to military control. Conditions which should usually indicate the wisdom of returning these cases to the United States are marked emotional instability, sexual psychopathies (homosexuality, etc.), paranoid trends, and specific criminalistic traits. These cases should be classified "D." Excessive fear or timorousness should prevent return to duty at the front. For military reasons it is especially undesirable, however, to return such cases to the United States. They should be recommended for duty in labor organizations and marked "C."

EPILEPSY

Epileptics should be classed "D," the only possible exceptions to this rule being individuals in robust physical health who have attacks of moderate severity at long intervals and those in whom treatment has had this result.

In making the diagnosis of epilepsy the fact should be borne in mind that attacks are likely to be less frequent in the favorable environment of the hospital while observation is being carried on than in the organizations from which patients are received. Great weight should be given to a well-authenticated history of epileptic seizures, especially when witnessed by medical officers or other persons who can give a clear account of their character. While the possibility of malingering should not be overlooked, it should be remembered that attacks similar to those in epilepsy are much more frequently psychoneurotic in their nature than feigned. The high prevalence of epilepsy among soldiers should be remembered.

DRUG ADDICTION AND ALCOHOLISM

These conditions are essentially curable. Inebriates and drug addicts should not be recommended for return to the United States with a view to their discharge until they have failed to respond to adequate treatment. Then, their disposition should depend upon the type of personality presented, the effects of alcohol or drugs in physical deterioration or

damage to the central nervous system, and the conditions to which they will be exposed when they are returned to duty. It will often be found that these cases do better at the front than in duty at the rear.

PSYCHONEUROSES (HYSTERIA, NEURASTHENIA, PSYCASTHENIA)

These conditions must be dealt with as disorders amenable to treatment under proper conditions. Individuals who fail to benefit from such treatment in the special hospital which has been provided, either because of severe defects in make-up or on account of previous mismanagement, should be returned to the United States for continued treatment unless it seems likely that good results can be obtained from their assignment to duty at the rear. A very large proportion of the severe neuroses seen in war are of the "situation type," rather than psychoneurotic manifestations in persons who have had many previous episodes of the same kind in civil life.

These instructions had the effect of amending or at least interpreting General Orders, No. 41. It was one thing to determine upon such a policy, however, and another to put it into effect. On account of misunderstanding what was contemplated, a good many disability boards in base hospitals passed upon the neuropsychiatric patients before evacuating them to the hospital center at Savenay. This was done for several reasons besides misunderstanding the intent of the order. One technical difficulty came from the requirement by the commanding officers of some base hospitals of the approval of a disability board before authorization of the travel necessary to take the patients to the base port. In addition, many mild cases of psychoneuroses recovered in interior hospitals and were deemed fit for class A duty. These could not be discharged to duty without review by a physical classification board, and it seemed unwise to delay it. It is interesting to see how frequently individual opinion tended to govern in these matters and thus defeat a general policy. In one large hospital center the commanding officer formed the apparently fixed opinion that no soldier who had ever developed psychoneurotic symptoms was fit for military duty in any capacity in France. In consequence he had ordered disability boards at that center to classify all such patients D and send them to the hospital at Savenay for evacuation to the United States. When it is remembered that a large proportion of all men who broke down at the front and were treated at army neurological hospitals returned to duty without ever having left the theater of operations,²⁸ and that 91 per cent of all patients treated at Base Hospital No. 117 were there reclassified for some type of military duty in France,¹⁰ it can be seen how untenable such an opinion was. These difficulties were largely overcome later through the intervention of the consultants for the hospital centers. These consultants interested themselves very actively in the question, served on, or examined cases for, disability boards, or gave opinions which helped to put the provisions of Circular Letter No. 24 into practical effect. At the first replacement depot established at St. Aignan-Noyer by the 41st Division a very large proportion of all reclassified men received in the early activities of the American Expeditionary Forces came before disability board No. 1.²⁹ From May 1 to December 31, 1918, 27,437 men appeared before that board, of whom 9,256 were classified A.²⁹

The 41st Division was provided with a division psychiatrist upon its arrival in France, but it soon became apparent that he would require additional

aid as the reclassification work of the division increased. During the summer of 1918 a neuropsychiatrist was detailed as chairman of the disability board and, with several assistants, he organized extremely effective and practical methods of neuropsychiatric examination and reclassification. The following report from the medical officer who was in charge of the neuropsychiatric department of Base Hospital No. 8, dated July 9, 1918, indicates the general principles which from that time on governed the reclassification of neuropsychiatric patients at that base port:³⁰

I. In accordance with verbal request, the general principle governing this disability board, with respect to line of duty in nervous and mental diseases, is submitted.

The following cases are considered not in line of duty:

1. Psychosis in men who have had a well-established psychosis previous to enlistment.
2. Psychosis in men so psychopathic in constitution that the psychosis represents merely an episode in a constitutionally psychopathic individual.
3. Psychoneuroses which were well established before enlistment and did not arise as the result of military service.
4. Epilepsy in men who have had well-established epilepsy previous to enlistment.
5. Mental deficiency.
6. Constitutional psychopathic states in men who have a life history of associated alcoholism, criminal tendencies, and delinquencies.

II. Cases considered in line of duty:

1. All psychoses developing since enlistment, presumably as the result of military service, without established histories of previous attacks.
2. Epilepsy, with first history of well-established epileptic seizures, occurring since enlistment and presumably as the result of military service, such as traumatic cases, shock, and others.
3. Psychoneuroses (hysterical states, neurasthenia, anxiety states, and others) in which the condition developed since enlistment, presumably as the result of military service.
4. Other diseases of the nervous system—such conditions as toxic neuritis, traumatic cases, affecting the nervous system—are considered in line of duty, unless well-established histories indicate their presence previous to enlistment.

III. In a number of cases of syphilis of the central nervous system the board has had difficulty in deciding the question of line of duty. These are cases in which the time of the initial infection is unknown and in which the invasion of the central nervous system occurred since enlistment and where military service may have been an important etiological factor. Instruction is desired as to proper procedure in such cases.

IV. The above general principles are followed and applied to each individual case, in accordance with the history as established. In acute psychoses the cases are considered in line of duty when the history of a previous attack can not be established.

The total work of neuropsychiatrists in connection with these boards throughout France was very great and represented an extremely useful contribution which was not without its effect in the work of rehabilitating ex-service men after the war.

There was established at Blois, in the summer of 1918, an officers' classification and efficiency board.³¹ Here many perplexing problems were dealt with. The officers who came before this board had had no charges preferred against them nor had they been suspected of any mental or physical disability. They had been judged unfit for combat duty, and they were to be reclassified and assigned to duty in the Services of Supply. It was soon apparent that there were cases coming to attention in which the only explanation of serious impairment of judgment, lack of self-control, or decrease in efficiency was

some form of mental disorder. In several instances the suicide of officers occurred after they had been reclassified, usually through demotion, by this board. Accordingly, a medical officer who had had nearly two years' experience in the study of war neuroses in British war hospitals and was at the time serving as division psychiatrist in the 1st Division, was assigned to this board, not as a member but as consultant in neuropsychiatry. He reported for duty in November, 1918, and continued his work until January, 1919. His reports showed that such a detail was well justified and he was able to bring to the attention of the board a considerable number of cases, some of them officers of high rank, in whom there were definite but quite unsuspected evidence of mental or nervous diseases. In not a few such instances the result of the board's investigation was the transfer of officers to neuropsychiatric hospitals and their evacuation to the United States for retirement or discharge on a surgeon's certificate of disability.

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- (3) Letter from the chief surgeon, A. E. F., to all division surgeons, September 8, 1918. Subject: Psychiatrists, neurologists, and ophthalmologists in tactical divisions. On file, A. G. O., World War Division, chief surgeon's files, 321.62.
- (4) Outlines of Histories of Divisions, U. S. Army, 1917-1919, prepared by the Historical Section, the Army War College. On file, Historical Section, the Army War College.
- (5) Station lists for medical officers assigned to the neuropsychiatric service, A. E. F.
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- (21) Letter from the senior consultant in neuropsychiatry, to the chief surgeon, A. E. F., November, 1918. Subject: Return of mental cases to the United States. Copy on file, Historical Division, S. G. O.
- (22) Letter from the senior consultant in neuropsychiatry, to the chief surgeon, A. E. F., November 28, 1918. Subject: Modification of plans for care of neuropsychiatric cases. Copy on file, Historical Division, S. G. O.
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- (25) Correspondence. On file, Record Room, S. G. O., 353 (Training neuropsychiatrists).
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- (28) Final report of the chief surgeon, First Army, November 20, 1918. On file, Historical Division, S. G. O.
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- (30) Letter from Maj. Sanger Brown, II, M. C., to the senior consultant in neuropsychiatry, A. E. F., July 8, 1918. Subject: Line of duty, disability board, neuropsychiatric cases. Copy on file, Historical Division, S. G. O.
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CHAPTER II

DIVISION, CORPS, AND ARMY NEUROPSYCHIATRIC CONSULTANTS

In the earliest recommendations for combating war neuroses in the American Expeditionary Forces the greatest emphasis was placed upon the work carried on in the divisions. The experience of the French and British medical services showed, within a very few months after the beginning of the war, that patients with war neuroses improved more rapidly when treated in permanent hospitals near the front than at the base, better in casualty clearing stations and postes de chirurgie d'urgence than even at advanced base hospitals, and better still when encouragement, rest, persuasion, and suggestion could be given in a combat organization itself. It was for the purpose of applying this well-established fact that plans were made to station a medical officer with special training in psychiatry and neurology in each combat division, since the division was to be the great combat unit of the American Army in France. It was deemed impracticable to consider detailing a consultant in neuropsychiatry to a combat unit smaller than the division.

Corps and army consultants in neuropsychiatry ordinarily had merely organizing and supervisory functions. The actual neuropsychiatric work with combat organizations in the theater of operations was done by the division psychiatrist and such enlisted personnel as were assigned to assist him.

DIVISION PSYCHIATRISTS

Immediately after the authorization by the War Department of the assignment of specialists in nervous and mental diseases to tactical divisions, as detailed in Chapter I, p. 273, the chief surgeon, A. E. F., issued the following circular outlining the duties of these medical officers:

CIRCULAR No. 5.—DUTIES OF MEDICAL OFFICERS DETAILED AS PSYCHIATRISTS IN ARMY DIVISIONS IN THE FIELD

HEADQUARTERS, AMERICAN EXPEDITIONARY FORCES,
OFFICE OF THE CHIEF SURGEON,
France, January 15, 1918.

1. The following outline naturally does not indicate all the means by which medical officers detailed as psychiatrists in army divisions in the field can be of service in dealing with the difficult problems arising in the diagnosis and management of mental and nervous diseases among troops. These officers are under the direction of the chief surgeons of the divisions to which they are attached, and they must be prepared at all times to render such services as he may require. These officers are not members of division headquarters staff. They are attached to the sanitary train.

2. It is essential for such officers to bear in mind the prime necessity of preserving, or restoring for military duty, as many as possible of the officers and enlisted men who may be brought to their attention. On the other hand, they should recommend the evacuation, with the least practicable delay, of all persons likely to continue ineffective or to endanger the morale of the organizations of which they are a part. This is particularly true in the

ease of the functional nervous disorders loosely grouped under the term "shell shock" but more properly designated as war neuroses. Psychiatrists detailed to this duty have a unique opportunity of limiting the amount of ineffectiveness from this cause and of returning to the line many men who would become chronic nervous invalids if sent to the base. At the same time they can bring to the attention of other medical officers and company commanders individuals who possess constitutional mental defects of a type which make it certain that they will break down under stress.

3. Specific duties which may be performed by psychiatrists in army divisions are as follows:

(a) Examine all officers and men under observation or treatment for mental or nervous diseases in regimental infirmaries, field hospitals, camp infirmaries, and other places, and to advise regarding their diagnosis, management, and disposition.

(b) Examine other mental or nervous cases in the divisional areas when directed to by the chief surgeons or requested to by other medical officers or company commanders.

(c) Examine and give testimony regarding officers and men brought before courts-martial or under disciplinary restraint, when directed or requested by competent authority.

(d) Give informal clinical talks to groups of medical officers in the divisions to which they are attached upon the nature, diagnosis, and management of the mental and nervous disorders peculiar to troops.

(e) Keep careful records of all cases examined.

(f) Make such reports to the chief surgeons of divisions as they require and to make monthly reports of their operations to the director of psychiatry, bringing especially to his attention any matters likely to increase the efficiency of this part of the medical work of the American Expeditionary Forces.

A. E. BRADLEY,
Brig. Gen., N. A., Chief Surgeon.

Approved:

By command of General Pershing:

J. G. HARBORD,
Chief of Staff.

The duties outlined in Circular No. 5 were amplified in certain respects, by Circular No. 35,^a as follows:

They will examine enlisted men brought before general courts-martial as provided by W. D. order of March 28, 1918. They will also examine all other military delinquents brought to their attention, especially those in whom self-inflicted wounds or malingering is suspected. Except under exceptional circumstances, no cases of this kind will be evacuated to the rear until examined by the division psychiatrists. In the case of prisoners accused of crimes the maximum punishment of which is death, the division psychiatrist should, whenever practicable, have the assistance of a consultant in psychiatry.

During the spring of 1918, when the combat divisions of the American Expeditionary Forces were engaged in every type of preparation for battle, many procedures were tested among medical organizations which were to serve combat troops. In addition, the weeding-out of undesirable members of the organizations, the selection of those best fitted to perform special duties, and the circulation of useful information, all went on with the utmost vigor.

The reports of division psychiatrists, pertaining to this period, show many interesting and useful activities. In several instances the division psychiatrists not only performed work in their own field, but rendered useful service in practically every type of medical undertaking carried on in a division. Regarded at first, perhaps, as superfluous members of an organization designed primarily for combat, they won for themselves the favorable opinion of their superiors

^a For full text see p. 280.

and demonstrated their capacity for usefulness. This had its value later when it became necessary for them to have greater responsibility in connection with the evacuation of sick and wounded, when the divisions to which they were attached were engaged in battle.

During the time under consideration, the 32d, 3d, and 77th Divisions arrived in France.¹ Each was provided with a competent division psychiatrist who had served with the division in the training camp in the United States, directed the neuropsychiatric examination of the personnel and, in each instance, established excellent working arrangements not only with the other medical officers, but also the organization commanders of the division.²

The division psychiatrists of new divisions arriving in France were provided with Circular No. 5, chief surgeon's office, A. E. F., and informed of the general plans for neuropsychiatric work in the American Expeditionary Forces. Parts of eight other divisions arrived during May¹ but too late to take part in the plan of training that had been employed for the first four and, in a modified way, for the others that had come in April.

There was available, by the end of May, 1918, a good deal of practical neuropsychiatric experience, for by this time practically all the neuropsychiatric problems of a division in action had been dealt with experimentally. In this experience it had been found that many difficulties arose unless the division psychiatrists scrutinized closely the flow of exhausted, concussed, and emotionally disturbed soldiers from the front and controlled, to a certain extent, their evacuation. Had there been time to do so, these experiences would have led to the establishment of methods certain to avert what happened a little later when a number of our divisions, unprepared by similar experience, were suddenly thrown into battle. No such opportunity came, however, for the military situation had become critical following the German offensive of March 21, 1918,³ and because of the pressing demand for troops for combat their training had to be considerably curtailed.⁴ Preparations for imminent battle conditions quickly replaced all other activities. The deficiencies in the organizations of the work of division psychiatrists were to be revealed by further experiences before they could be remedied.

In our earlier combat activities, our divisions served as a part of the French forces.³ With the plan of evacuation through American channels abandoned, while our divisions were serving with the French,⁵ and corps and army medical organizations were only partially effective, it was natural that a combat division should seek only to free itself of its sick and wounded in the quickest way. Experience already had shown the necessity for making separate provisions for gassed cases by designating a divisional field hospital as a gas hospital,⁶ but with the large number of casualties and the fairly rapid advance of troops, it did not seem possible to designate a field hospital to receive exhaustion, concussion, and neurotic cases, much less to set one aside for their exclusive use. It is not surprising, therefore, that many of our soldiers evacuated from the front during the early months of our participation in active warfare were neither wounded nor gassed, the majority of whom could have been returned to their divisions, had the opportunity been provided, after a few days of rest, encouragement, and psychotherapy.⁷ The subsequent careers of these men were

determined by the hospitalization conditions that existed to the rear of the combat divisions rather than within them. In this connection it is appropriate to state here that, during the German advance in March and April, 1918, the French had lost all their evacuation hospitals, totaling approximately 45,000 beds.⁸ Behind the retiring lines of the French, with whom the American divisions were now fighting, there was insufficient hospitalization to care for the French wounded as well as American; therefore, it was necessary for us to take charge of the medical service to the rear of our divisions. Since the number of our evacuation hospitals at this time was far below the authorized quota, and as the sector originally selected for occupation by American troops was that facing Lorraine, about 160 miles to the east of Meaux, our stationary hospitals had been concentrated largely in that area and to its rear. In consequence, many hundreds of men suffering from exhaustion, concussion neurosis, fear, and other emotional states found themselves, within a few days after leaving their organizations, in hospitals a hundred miles or more away from the front. Very few of these men ever returned to active duty.

The value of these experiences lay chiefly in the demonstration of the fact that American divisions (even after a careful selection, with the elimination of many psychopathic, mentally defective, and unstable men) were capable of furnishing a large number of war neurotics under battle conditions, and that these patients were as resistant to treatment at points distant from the line as those in the armies of the French and British, upon whose experience our plan had been based.

Fortunately, there were some noteworthy activities that indicated marked progress. For example, during the Aisne operation, the division psychiatrist, 3d Division, effected the establishment of a field hospital for mental patients, and the return of a large proportion of his cases to their own organizations without the necessity of their leaving divisional control.⁹ During the Aisne-Marne operation, the division psychiatrist, 4th Division, by stationing himself in the triage, and having set aside a field hospital about 6 miles farther to the rear, was able to divert from the evacuation hospitals a large number of men suffering from conditions likely to result in war neuroses, and to return many of them to the front.¹⁰ In most of the other divisions engaged, however, it was found or thought to be impracticable for division psychiatrists to station themselves in triages. No effort was possible, therefore, to distinguish between exhaustion, concussion, fear, and neurosis, and the diagnosis "shell shock" was indiscriminately used when men seemed to be suffering from any of these conditions. The result was that such cases were evacuated to base territory.

Ten American divisions (the 35th, 82d, 33d, 27th, 4th, 28th, 80th, 30th, 77th, and 78th) were designated to operate at one time or another, with the British in northern France and in Belgium.¹ There it was impracticable even to attempt to put into effect a plan which had been devised originally for an American sector. Patients suffering from psychoneuroses were evacuated from those divisions along British lines of evacuation and most of them reached England within a relatively short period of time. Here they were treated at first in special British hospitals for war neuroses, where American medical officers often took an important part in their management and, later, in American

base hospitals in England where their treatment conformed to the principles that are described elsewhere in this volume. (See p. 398.)

The importance of more adequate medical organization to care for neuro-psychiatric cases at the front was brought to the attention of the director of professional services, A. E. F., by the senior consultant in neuropsychiatry in the following letter, dated August 6, 1918:¹¹

1. The recent severe fighting has resulted in a very large number of soldiers with war neuroses being evacuated to hospitals in the S. O. S. Base Hospital No. 117, on account of lack of provision, has been obliged to decline to receive cases by transfer from other base hospitals. Until the results of telegraphic inquiry recently sent out are known, it is impossible to say how many of these cases are in the hospitals of the S. O. S. The fact that no less than 350 were present a few days ago in the hospitals in Vittel and Contrexeville and 135 in Base Hospital No. 115 indicates that a considerable part of our hospitalization is devoted to their care.

2. Such a high incidence of these disorders after a brief period of active fighting gives some idea of the efforts that must be made in the A. E. F. if we are to deal with the problem of the war neuroses in an effective way and prevent serious wastage from this cause.

3. It is desired at this time to invite attention to only one phase of the problem—the urgency of affording divisional psychiatrists an opportunity to pass upon these cases whenever practicable before they are evacuated to the S. O. S. It has been reported to me that many of the cases received in base hospitals are not suffering from any kind of psychoneurosis or from the effects of concussion by high explosives. Many of them are cases of physical exhaustion who would have been entirely fit for duty after a short period of rest without hospitalization had their condition been recognized. Most of the cases, not a few of whom I have examined myself, express great surprise that they should be sent to hospitals and their chief desire is to join their organizations as soon as possible.

4. The importance of checking this source of wastage of man power can not be overestimated. I directed attention to it in a report rendered to the Surgeon General in July, 1917, and in many communications since that time. In division psychiatrists our Army has a most effective means of determining what cases shall be evacuated to the S. O. S. It is very unfortunate that services of these officers, many of whom were specifically trained for their duties in reference to this particular task and all of whom are fully aware of what must be done, are not utilized most effectively in the tactical divisions. I believe that every effort should be made, now that actual experience has demonstrated the validity of previous recommendations, to provide them with facilities for their work.

To meet the needs of specialists with divisions at the front, the chief surgeon A. E. F., sent to all division surgeons a communication concerning the duties of certain specialists, the sections of which that deal with neuropsychiatrists being given below, those dealing specifically with other specialists being omitted:

AMERICAN EXPEDITIONARY FORCES,

France, September 8, 1918.

From: Chief Surgeon.

To: All Division Surgeons.

Subject: Psychiatrists, urologists, and orthopedists in tactical division.

There is apparently some misunderstanding among division surgeons relative to the duties and status of specialists assigned to divisional formations for duty.

During the recent activities one division surgeon assigned the psychiatrists to dressing the slightly wounded. While he was engaged at this work, several hundred cases of slight war neurosis were evacuated that would never have left their division if they had been examined by a trained psychiatrist.

The above instance is cited to show the importance of properly utilizing the services of these trained specialists with a view in this instance of avoiding a repetition of the experiences during the recent activities when a total of nearly 4,000 cases of slight war neurosis were evacuated to base hospitals that should never have left their divisions.

1. GENERAL STATUS AND DUTIES

Orthopedists, urologists, and psychiatrists are attached to tactical divisions solely to aid in dealing with the medical and surgical problems of the divisions.

Their activities have two objects: (a) to keep the fighting strength of the division at the highest possible point, and (b) to bring about the prompt elimination from the division of those who become unfit for duty.

These three branches of medicine and surgery are represented because they are concerned with those diseases and injuries which experience shows contribute most to noneffectiveness of individual soldiers and troops in general.

The function of these specialists is to help the division surgeon in the clinical work of the division in much the same way that the sanitary inspector does in sanitation and the assistant to the division surgeon in administration. They should be attached to the office of the division surgeon as additional assistants. In no other way can they render most efficient service. Their permanent assignment to any subordinate sanitary formation of the division inevitably curtails their usefulness. In periods of stress, however, they should be stationed by division surgeons in the post in which they can work to the best advantage (e. g., orthopedists and psychiatrists in triages, the urologists in surgical hospital during combat).

They should not be regarded as consultants representing an organization outside divisional control but as integral parts of the division sanitary personnel, wholly concerned with the medical work of the division to which they are attached and directly under the supervision of the division surgeon.

Psychiatrists

Division in training or rest:

1. Elimination of insane, feeble-minded and epileptic (especially among replacements).
2. Mental examination of general prisoners in accordance with sections 11, G. O. 56, C. S.
3. Instruction of medical officers regarding diagnosis, early management, and prevention of war neuroses ("shell shock").

Division in combat:

1. Examination and sorting of officers and men returned to advanced sanitary posts for exhaustion, concussion by shell explosion, and war neuroses in order to control their evacuation.
2. Treatment of light cases of exhaustion, concussion, and war neuroses in divisional sanitary formations so as to preserve the greatest number possible for duty.
3. Mental examination of general prisoners and men suspected of having self-inflicted injuries.

(Signed) M. W. IRELAND,
Major General, Medical Corps, Chief Surgeon.

When the American Expeditionary Forces plan for caring for psychiatric casualties had been definitely realized and was in actual operation the following circular letter from the office of the senior consultant in neuropsychiatry was issued under date of September 25, 1918 (section dealing with army neurological hospitals and supervision omitted).

ARRANGEMENTS FOR CARE AND EVACUATION OF NERVOUS AND MENTAL CASES

I. DIVISIONS

1. Each division in the area has a division psychiatrist who will be stationed at the triage when his division is engaged. There he will sort all nervous cases, returning directly to their organizations those who should not be permitted to go to the rear and resting, warming, feeding, and treating others, particularly exhausted cases, if there is opportunity to do so. He will recommend all others for evacuation as follows:

(a) To a field hospital if all or part of one can be devoted to the care of cases likely to return to their organizations within two to five days.

(b) To Neurological Hospital No. 1 at Benoite Vaux or Neurological Hospital No. 3 at Nubécourt if a field hospital can not receive or care for such cases. Under these circumstances evacuations to the neurological hospitals will be direct; otherwise only cases unsuitable for or unimproved by treatment in a field hospital will be evacuated to them.

2. The advantages of these provisions for dealing with war neuroses and allied conditions in the divisions are:

(a) Control over the evacuation of cases presenting no psychoneurotic symptoms.

(b) Speedy restoration and return to their organizations of those in whom exhaustion is the chief or only factor.

(c) Cure of mild psychoneurotic cases by persuasion, rest, and treatment of special symptoms at a time when heightened suggestibility may be employed to advantage instead of being permitted to operate disadvantageously.

(d) Prevention or removal of hysterical symptoms (such as mutism, paralyses, etc.) so that, even if the patient has to be evacuated, his subsequent treatment will have been rendered easier and his recovery more prompt.

(e) Effective management of severe concussion cases during the first 24 hours, thus shortening their convalescence.

(f) Creating in the minds of troops generally the impression that the disorders grouped under the term "shell shock" are relatively simple and recoverable rather than complex and dangerous, as the indiscriminate evacuation of all nervous cases suggests.

The military organization for the care of war neuroses in the field had the merit of simplicity. No complex scheme could have succeeded. The division psychiatrist was stationed at the advanced field hospital, or triage, and his range of activity extended forward to the ambulance dressing stations and beyond as far as he cared to go and backward as far as the rear field hospital, which was the unit treatment center. The triage, or sorting station, was apt to be anywhere from 2 to 9 miles, or more, from the front line, and the treatment field hospital 4 to 7 miles farther removed. The former was usually an abandoned strong barn; and the latter, generally under canvas, capable of caring for about 150 patients in five or six large tents. At the treatment field hospital the division psychiatrist was generally able to count on one enlisted man, Medical Department (usually without any nursing knowledge), to care for each 15 patients. The necessary medical assistance at the treatment field hospital was rendered by ward officers who were without psychiatric training. In some divisions the authority, as to the management of neuropsychiatric cases, was practically absolute, or, at least, could be readily made so. The fact that the war neuroses presented such unusual problems to commanding officers of field hospitals, who were unfamiliar with their genesis, type and treatment, and who wished to have these problems solved, made it possible in some organizations for the psychiatrist to obtain all necessary cooperation. In other organizations, however, where the commanding officers were hostile to the retention of such cases at the front, the division psychiatrist worked under great handicaps.

Thus, the work of the division psychiatrist was of such a nature that it required unusual skill in psychotherapy, courage, good nature, and sociability, which a few who were assigned to this work did not have.

An assistant divisional specialist would have proven a valuable adjunct. It is true that even with an active combat division there were times when there was scarcely enough work to keep the division psychiatrist occupied; yet these periods were succeeded by days or weeks of stress and strain in connection with some important military operation when the services of a trained assistant would have been invaluable. The small "pool" of neuropsychiatrists under the control of the corps or army consultant proved to be a useful means of meeting this need. The character of battle activity determined to some extent the number of psychiatric cases occurring in a division. Fighting which obliged men to remain expectantly in trenches or reserve positions under heavy bombardment for considerable periods of time produced many nervous and exhaustion cases. Open warfare, with the men in action and on the move, alert, and watching the enemy, produced fewer cases, although exhaustion was frequent. Artillery fire, with the weird whistling of the approaching shells, the terrific detonations, and the mutilations produced by exploding shells, unnerved many men. On the contrary, rifle and machine-gun fire were not important factors in the production of nervous disorders. In fact, there were practically no cases in which rifle or machine-gun fire was the upsetting factor.

The production of exhaustion cases followed days of constant fighting, with insufficient or no sleep, food, and water. The soldier always started into action with a full canteen and two days' reserve rations. He almost invariably kept his canteen, gun, and ammunition, but everything else in the way of equipment, including his rations, was cast aside as soon as it encumbered him. Consequently, not infrequently men were without food or water for several days at a time. The long-continued fighting, lack of rest and food, together with having to lie out in shell holes all night in the cold and rain, frequently overcame the most courageous of men. Then a shell exploding near them, knocking them over or possibly killing or wounding a comrade, was often the last straw.

A high percentage of men evacuated from the front line as "gassed" were really cases of fatigue, exhaustion, and emotional disturbance. It was necessary, therefore, that from this group the fatigued and exhausted be sorted out for treatment in one of the field hospitals. Of the medical cases reaching the triage the most common diagnoses were "bronchitis," "influenza," and "diarrhea." In many cases the most important factor was fatigue. These cases were also sorted out and retained for treatment in the divisional field hospital.

In the last group there were the neuroses with tremors, speech and hearing disorders, ataxias, and stupors. The severe cases were evacuated as promptly as possible to the army neurological hospitals, while the milder cases were retained, treated, and returned to duty. The proportion retained was usually determined by the exigencies of the campaign.

True cases of concussion almost invariably asked not to be evacuated, as they desired to return promptly to their own organization. In the less severe cases this was done.

Aside from the milder cases of exhaustion, sorted out from among the gassed and medical groups, the largest number of psychiatric cases was the exhausted with nervous symptoms. Men who were worn out, upon seeing their comrades killed or injured, and possibly being knocked over themselves by an exploding shell, lost their nerve, cried, shook all over and felt afraid, crouched and put up their arms as if to protect themselves each time they heard a shell coming or exploding. These responded promptly to treatment at the front.

The sick and wounded were tagged either by a medical officer or, as generally was the case, by enlisted men of the regimental sanitary detachments, indicating in a general way that the man was wounded, gassed, sick, or nervous. The sanitary personnel had all been instructed to use only the term "N. Y. D. (nervous)" for the latter group of cases. This was an important matter, as it was surprising to see with what tenacity men clung to a diagnosis of "shell shock" or "neurosis" even though the tag had been made out by one of the enlisted sanitary personnel. Sometimes soldiers would wander into dressing stations and cheerfully announce that they were "shell shocked." By using the term "N. Y. D. (nervous)" they had nothing definite to cling to and no suggestion had been given to assist them in formulating in their own minds their disorder into something which was generally recognized as incapacitating and as warranting treatment in a hospital, thus honorably releasing them from combat duty. The patients were therefore open to the explanations of the medical officers and to the suggestion that they were only tired and a little nervous, and that with a short rest they would be fit for duty again.

It is worth while in this connection, as an example of neuropsychiatric work at the front, to review briefly the military history of the work of the division psychiatrist of the 26th Division,¹² and to observe how the curve of neurosis incidence followed the activities of the troops, rising during active campaign and falling again after comparative quiet had been restored. Obviously in times of severe strain the need for a medical assistant to the division psychiatrist was very real.

Between February 5 and 8, 1918, the division entered the line north of Soissons, in the famous Chemin des Dames sector, where we remained until March 21. Only about 18 psychopathic cases were evacuated during this time. The reason for this low incidence was that the sector was a comparatively quiet one, there was not much heavy shelling, the troops were fresh and eager, and we were brigaded with a veteran French division, thus relieving our own men of much anxiety and responsibility. Beginning April 1, 1918, we relieved the 1st Division in the "Boucq" sector, northwest of Toul.

The stay of the division in this sector was marked by several serious encounters with the enemy, where considerable forces were engaged. There were furthermore almost nightly encounters between patrols or ambush parties, and the fire of the artillery on both sides was very harassing. On April 10, 12, and 13 the lines were heavily attacked by the Germans. At first the enemy secured a foothold in some advanced trenches which were not strongly held, but sturdy counterattacks succeeded in driving him out with serious losses, and our line was entirely reestablished. Fifty-two cases resulted. April 20 and 21 the Germans made a second raid on our lines about and in the town of Seicheprey and Remieres Woods, supported by exceptionally severe artillery fire. Forty-three cases developed from this attack. A third raid was launched on June 16 at the village of Xivray-Marvoisin, but failed to get within our defenses. As if in retaliation for the decisive check the enemy had suffered, he delivered throughout the day exceedingly severe artillery fire on the battery positions and rear areas. Thirty-six cases followed the bombardment.

On July 4 we relieved the 2d Division in the line just to the northwest of Chateau Thierry, taking over the hotly contested and hard-won line from Vaux-Bouresches—Bois de Belleau—to the vicinity of Bussiares. With no system of trenches or shelters, there was great exposure to enemy machine-gun and artillery fire; the woods and villages on the line were drenched with gas; a vigilant and aggressive enemy allowed no rest. The men were tired. They had been in the line almost continuously since February 4.

The great German drive southward between Compiègne and Rheims had reached the Marne River. For the moment it had been stopped, but a renewal of the attack was to be expected. The long-distance guns were dropping shells in Paris, 40-odd miles behind us; the Germans were desperate and promised to reach Paris at the next thrust. The morale of our troops was not topnotch and it was thought that many of them would break if anything serious occurred. These expectations were fulfilled a few days later.

On July 12 and 13 the enemy made a vigorous thrust at our positions in Vaux, but was beaten back with equal vigor. Seventy-one cases resulted. On July 18 the attack of the division, as part of the general operation to reduce the Chateau-Thierry salient, and thereby avert the threatened danger to Paris, was begun. The villages of Belleau, Torcy, and Givry were taken; Hill 193, behind Givry, was twice won, but had to be abandoned because the French on our left had not been able to make rapid enough progress to secure the position. Heavy opposition was encountered, the enemy employing many machine guns and well-placed artillery fire. Sixty-eight cases occurred on July 18 and 74 on July 19. On July 23, with thorough artillery preparation, the division attacked again, endeavoring to penetrate and clear up Trugny Wood, Epieds, and the woods behind it. Although stubbornly opposed and in spite of severe losses, our troops went forward steadily. Forty-nine cases developed.

On July 25 we were relieved. About September 5 we took over the "Rupt" sector. Until September 12 the sector remained quiet. On that date, however, began the great attack in force on the St. Mihiel salient by the American First Army. * * * The principal defense of the Germans was machine guns, well placed in concrete "pill boxes"; but there was very little artillery response. * * * Only 26 cases resulted, probably because of little artillery fire from the enemy.

On September 26, the division was given the mission of executing a heavy raid against the German positions at Marcheville and Riaville, as a diversion in the general attack of the American First Army, which was to start on that date on the whole Meuse-Argonne front. Similar raids were to be executed by the other divisions of the corps at the same hour, the orders being to penetrate the enemy lines, make prisoners, and occupy the position throughout the day, withdrawing under cover of darkness. Heavy enemy resistance and counterattack resulted in six cases of acute mental disturbance.

Shortly afterward we concentrated in and near Verdun. On October 16 we took part in an attack for the purpose of obtaining possession of the Bois d'Haumont, supported by tanks. The tanks failed utterly and heavy casualties resulted. Twenty-one cases resulted.

During our stay in this (Neptune sector) conditions were very severe. Influenza was prevalent; the rain was almost continuous; shelter was insufficient. The enemy occupied positions of great natural strength, and was backed by a numerous artillery.

He valued these positions highly and hung on with bulldog tenacity. Gas was constantly thrown into the valleys and harassing artillery fire was heavy. Attacks were made daily from October 23 to 27 inclusive, in conjunction with the 29th Division against the Rylon d'Etrayes-Bois Belleau-Hill 360 positions, which won for us a considerable advance, in spite of our heavy losses. Thirty-five cases occurred. The next few days passed without any action save vigorous and successful patrolling to make prisoners.

On November 7, with its general axis of advances changed from east to southeast, the division executed a second attack on a wide front toward the Jumelles d'Orne beyond the Chamont-Flabas line. The attack was renewed daily up to and including November 11. Finally, at 11 o'clock, the cessation of hostilities brought the active operations of the division to a conclusion.

EMERGENCY TREATMENT AT THE FRONT

Stationed, as the division neuropsychiatrists were, in combat areas, all their work being confined to field hospitals, where patients were held only from 3 to 10 days, depending upon military operations, the experience of these officers with the treatment and final outcome of the cases was limited chiefly to the milder forms of the neuroses. The more obstinate and chronic cases, of necessity, were evacuated to the rear areas.

To the treatment hospital at the front the neuropsychiatric patient was sent after he had taken the first important step on the road to recovery. At least no one was sent there until a determined effort had been made to convince him that he could be cured. Of course, there was necessarily a constant and fairly large residuum of refractory cases, but these were not permitted to negative the atmosphere of optimism which existed. Although situated in the field within the range of artillery fire, and subject to the military necessity of moving at an hour's notice, it was still possible to approximate suitable hospital conditions. The first difficulty which presented was the lack of nurses. The group of enlisted men who were selected had in the beginning nothing more than the doubtful merit of curiosity concerning the "shell-shocked" soldiers. Until it was possible to inculcate a certain degree of nursing morale it was necessary to deal with them from the point of view of military discipline. Certain orders were given, and failure to obey them was considered a punishable infraction of a military command. The few simple rules and suggestions utilized at first (in one division) are here quoted:

RULES FOR PSYCHONEUROSIS WARDS

1. Each patient on admission to have a hot drink.
2. Each patient to have three full meals a day unless otherwise ordered.
3. Do not discuss the symptoms with the patient.
4. Be firm and optimistic in all your dealings with these patients.
5. No one is permitted in these wards unless assigned for duty.
6. The rapid cure of these patients depends on food, sleep, exercise, and the hopeful attitude of those who come in contact with them.

From such an elementary beginning there gradually developed among the enlisted men, who acted as nurses, a high degree of interest and efficiency and a generalized and successful effort to intelligently maintain certain therapeutic principles without which success would not have been possible.

Classification was an important function of this hospital. Generally speaking there was an effort to keep the mild cases in one tent, the more severe in another, the physical problems separate, and the recovered awaiting return to the front apart from the others. Soldiers with obstinate symptoms were segregated.

The physical needs of the patients were constantly borne in mind. Hot, abundant meals were provided; exercise, amusements, and work were utilized, not haphazard fashion, but with a certain object in mind.

One finds in current reports on the therapy of war neuroses indefinite allusions to an intangible and mysterious therapeutic influence termed "atmosphere." By this is meant, presumably, the general feeling and understanding which existed among all those who came into medical contact with the war neu-

roses, and which sought to provide an urge or incentive for the soldier to return to his duty on the firing line. This was necessarily developed at every point in the American Expeditionary Forces where nervous and mental casualties were grouped for treatment. However, it should not have been permitted to remain at a vague and undefined stage, nor should its growth and direction have been left to mere chance. As a matter of fact, it was a thing which could be deliberately created and shaped into a definite and valuable therapeutic agent. As employed in the type of hospitals under consideration, it was separated roughly into positive and negative elements, the first being concerned with the advantages of returning to the front, and the second with the disadvantages of evacuation to the rear. Constantly, and in every conceivable fashion, were emphasized the glory and traditions of the division, of the regiment, and of the company, and the very important part which each soldier played in contributing his share. Further, the personal relation which so frequently existed between officer and soldier was in a sense filial, just as the intimate feeling between man and man was fraternal. In the field with combat troops, where close association under dangerous conditions made for the relaxation of certain features of rigid military discipline, such as ordinarily obtains in a cantonment, or camp, and also erased social barriers, it is exceedingly probable that what might be termed an artificial familial instinct was often developed and replaced in a measure the one of which the individual was at least temporarily deprived. This factor, too, could be utilized as a powerful means for obtaining a healthy therapeutic atmosphere.

On the other hand, evacuation to the rear was painted in gloomy colors. The patients came to realize that leaving the division, or unit, meant probably the opportunity forever lost of having a part in its present victories and consequently in future honors and rewards. It involved a total separation from the paternal officer and brother soldier, and finally becoming that most unhappy of mortals, a lone casual. It was in a sense a desertion, since it left comrades to "carry on" alone. It would be impossible to enumerate all the methods employed to foster and stimulate such impressions. The following sample will serve: Informal talks to groups of soldiers, the announcing and publishing of bulletins recounting the gallant advance of this or that unit, or the exploits of some well-known officer, or soldier, of the division, the reading and discussing of citations which had been received, rumors of a big offensive which was imminent, or of a well-earned rest which soon would be officially ordered, and the relating of incidents and episodes, "gossip" with a personal flavor which had come back by word of mouth from the front. No incidental opportunity was neglected. For instance, during the Meuse-Argonne operation, columns of German prisoners frequently passed the tents. The patients were urged to view the procession, always a stirring event, which often succeeded in evoking an exhibition of satisfaction and even patriotic fervor. It is doubtful whether anyone who has not been an actual witness can appreciate the value of even such simple measures. The whole plan was far from being an uncertain proposition which could be expected to appear and act spontaneously, but was based on an estimate of what emotions and feelings were to be activated and what degree of stimulation was needed to gain the desired object.

It is difficult to understand why such a personal and concrete thing as the attitude of the psychiatrist toward each of his patients had to be is so often described in such general terms. It was by far the most important feature of practically any form of treatment. Taking its cue chiefly from personality and intellectual capacity, it had to be rapidly defined in the mind of the physician so as to meet the needs of the individual under consideration. Further, frequently it had to be varied from time to time in the same case. It affected every phase of treatment, often dictating the mode in which specific symptoms were removed, modifying the explanation of the neurosis and governing the methods utilized in the final rehabilitation of the soldier before his return to the front.

The particular methods of treatment utilized may be roughly divided into those which were applied to all the patients, or to fairly large groups, and those which had an individual application. The former is largely dependent for its effect on the creation and maintenance of the right kind of military atmosphere, which seeks to produce and encourage a desire to return to the front. In this respect the following observations may be of interest: A certain type of soldier, often of a moderately high intellectual grade, not infrequently presented a curious psychological paradox as the time for his return to the front approached. He had made a good symptomatic recovery, had a considerable degree of insight into the mechanism of his neurosis, may have expressed a wish to go back to his regiment, and yet found a marked difficulty in taking the final step. This was not due to the fact that he was distinctly unwilling to return to duty, for he would have been as much or even more troubled by a decision which would have evacuated him to the rear. Apparently, there was in these cases a temporary volitional paresis. This condition was observed in a small percentage of all the neuroses. Experiments along the lines of logical reasoning and appeal to the individual had little result, and it was decided to try the effect of another plan. When a sufficiently large group had been collected, they were gathered together in a tent and given an informal talk, which was little more than an effort to reach and sway the emotions. Beginning with a recital of the situation at the front with reference to the division, and particularly to the various units which were represented by the soldiers present, it emphasized the acute need for every available man, and the fact that comrades were suffering because of their absence, and finally came to a climax by a dramatic request for volunteers for immediate service. The result was always highly gratifying, and the spontaneous enthusiasm showed that these men were actuated by something more than mere deference to the wishes of an officer. In another group of patients who had made a fairly good symptomatic recovery, or who persistently retained a few insignificant symptoms, the question of volitionally withheld cooperation arose. Two courses were open. The power of the military machine might be invoked to force action, reducing the matter to a choice between front line duty or court-martial. Such a procedure was not employed. Its permanent value is not only questionable, but it is open to objections on ethical grounds. However, it had to be recognized that the problem was no longer strictly a medical one. Without using undue severity and with no trace of malice, such men soon found that an invisible barrier had

been erected between them and the other patients. They were denied certain privileges and had to do most of the distasteful work, such as policing the grounds, digging latrines, etc. No one was permitted to impugn their motives, yet on every side they were confronted by a questioning attitude. Always the opportunity was afforded, and was indirectly encouraged, to talk over the situation with one of the physicians; always there was the invitation and the temptation to change their status to a happier and more honorable one. About 90 per cent of this group were eventually reached by such a simple method.

For the attack on individual symptoms resort was had to various forms of suggestion which have been described in detail by various authors. Whenever there was a choice between two methods, the simpler was always preferred. Complicated procedures seemed unnecessary. Often nothing more elaborate than passive relaxation of flexion and tension plus appropriate suggestion was needed to remove tremors; indeed, many of them disappeared spontaneously. If a paralysis responded at all to passive movement which gradually became active by the imperceptible withdrawal of the assisting hands of the physician, electricity was not employed. If an hysterical deprivation could be reached by suggestive persuasion or argument, such "tricks" by means of the stethoscope, tongue depressor, mirror, etc., as were in vogue were avoided. There were, of course, times when a degree of mystification was necessary, but it was never the first resort and was usually reserved for more refractory symptoms. Hypnotism was never used. As a preliminary to the consideration of the individual symptoms, there was an estimate of how much of the symptom was real and how much was only apparent. A change of position to one making for greater physical comfort, the removal of constricting clothing or of an external source of irritation, a hot drink, and a reassuring word or two were sometimes in themselves sufficient to decrease materially the range of tremors, to improve an exaggerated posture or movement, or to reveal a seeming paralysis as only a paresis. The amount of amnesia, particularly, always appeared greater than it really was. Before any intensive attempt was made to treat it as a symptom its extent was carefully gauged. A simple and brief series of questions and answers often strikingly diminished its proportions. The selection of a route to gain access to any sign or symptom which presented in a patient was much influenced by the attitude which the psychiatrist had decided on as best suited to meet his needs as an individual.

When more refractory symptoms were to be dealt with, that which seemed the most obvious thing to do was attempted first. Strict segregation had a wholesome effect on obstinate tremors or convulsive movements. Every advantage was taken of possible modifications of classification. A patient with a persistent difficulty would be placed for a short time in the midst of a small group of recovered soldiers awaiting transportation to the front. Occasionally some one who had made a particularly striking recovery was kept for a few days as a sort of hospital "pet" for the sake of the effect on difficult cases. He was taken into the confidence of the psychiatrist and instructed as to what was expected of him. Now and then a "chronic" patient was made to observe the removal of some symptom in a recent case. Sometimes the physician planned to have his conversation and opinions overheard by this or that

individual. At times, when dealing with troublesome symptoms, it seemed advantageous, after the soldier's curiosity had been aroused, to postpone the final seance a number of times. A few elaborate consultations were staged wholly for their psychic effect. Such instances as the above might be endlessly multiplied; they merely served to intensify suggestion and were therefore useful.

The employment of simple procedures had several advantages. They needed no elaborate paraphernalia and did not demand lengthy preparation. In the field space and time had to be carefully conserved. Further, it must be remembered that the patients, as they came to the triage, were like closed books. The soldier himself was frequently the only source of information available, and consequently there were many gaps in the history. When dealing with an individual whose potentialities were largely unknown it seemed the part of wisdom to restrict oneself, if possible, to things which could do no harm. Some of the more complex forms of technique depend largely for their suggestive value on the veil of mystery which surrounds them. Unless absolutely necessary, in some unusual instances, their exhibition ought to be avoided. They are apt to prove embarrassing when the time comes to give the patient the explanation of his neurosis, when, of all times, the physician needs to be sure of his ground. This explanation, too, must be as simple as possible. However high the educative and intellectual standard of the enlisted men in our Army might have been, it did not reach the point where an involved discussion of psychopathological mechanism could be appreciated. Even primary ideas and illustrations had to be used with caution, and the test of their efficacy rested on whether they were easily comprehended by the patient and satisfied his needs.

Of 400 war neuroses, embracing all types and occurring in different operations at the front, approximately 65 per cent were returned to front line duty after an average treatment period of four days. During the second half of the Meuse-Argonne operation, the recovery rate amounted to about 75 per cent; earlier, along the Ourcq, it had dropped to as low as 40 per cent. This fluctuation was governed by military necessity. In other words, there were four separate hospital-evacuation orders which affected about 70 patients who had had less than 36 hours' treatment. It is reasonable to assume that at least one-half of this number would have recovered if it had been possible to retain them 48 hours longer. After the armistice was signed an effort was made to determine the number of times a second attack had appeared. Only nine recurrences were found—less than 4 per cent of the total returned to duty. It is possible, of course, that a few cases may have passed through the triages of other divisions. However, these would necessarily have been restricted to troops on the flanks of the line and their number therefore could not have been significant.

The recovery rate was influenced by certain factors. From the type of symptom presenting one could often predict the ease or difficulty which would attend its removal. Generally speaking, symptoms which occurred in conditions where there had been a definite trauma, or emotional insult succeeded by a stage of relaxed consciousness, responded readily. They were frequently of

a hysterical variety. On the other hand, those which belonged to states which had been evolved in the plane of consciousness were not so accessible. They were apt to have a neurasthenic or psychasthenic coloring. Anxiety symptoms of various kinds presented the knottiest problems, and a relatively high percentage of these had to be evacuated to the rear.

When time is necessarily limited the rapidity with which contact can be established between patient and physician is an important consideration. The degree of inaccessibility in the make-up of the soldier will be reflected in the therapeutic failures recorded in the field. The responsibilities of the psychiatrist were clear. He had to return as many men as possible to duty, and during times of great activity it was not always feasible to give each patient the full amount of attention his condition deserved. In this way, and at these times, the individual whose personality involved careful and extended study in order that his neurosis might be reached, sometimes had to be neglected as a matter of military economy.

The intellectual status of the patient was not without its effect. The relatively ignorant soldier was usually softer clay in the physician's hands than was the one in whom learning and training had sharpened the habit of questioning, scrutinizing, and weighing in the balance. Of course, these two of ten developed different types of neuroses, but, given the same condition in both, the former could be handled with far greater rapidity and more surety of success.

Finally, the recovery rate fluctuated in response to extraneous and wholly accidental factors. It was appreciably higher at periods when the division was about to be relieved, and it was lowered at the beginning of what promised to be a long campaign. During the three or four weeks preceding the armistice, when victory followed victory on every front and definite success seemed assured, it reached its apex. The psychological effect of such incidental happenings, of course, was complex; but in general they lessened the activity and the need of close surveillance on the part of the preservative instinct by the intrusion of new and attractive possibilities; the anticipation of rest and pleasure in different surroundings under safe conditions in the former instance, and in the latter the prospect of an early return to the United States as a member of a victorious fighting division, and a resumption of all those pleasant relations from which the soldier had been cut off by the war.

A statement of experiences with the war neuroses would be incomplete without some reference to gas hysteria and its treatment. A striking instance occurred during the Aisne-Marne operation, when the 3d Division was in the neighborhood of the Vesle River. One morning a large number of soldiers were returned to the field hospital diagnosed as gas casualties. The influx continued for about eight days, and the number of patients reached about 500. The divisional gas officer failed to find any clinical evidence of gas inhalation or burning, and the psychiatrist was given an opportunity to act as consultant. The patients presented only a few vague symptoms. There were, perhaps, four or five instances of aphonia, but in the average case the symptoms presented were a feeling of fatigue, pain in the chest, slight dyspnea, coughing, husky voice, an assortment of subjective sensations referred to the throat, varying from slight tingling to severe burning, and some indefinite eye symp-

toms. Physical and neurological examination was practically negative, and the mental findings were inconclusive; if anything there was an undercurrent of mild exhilaration. Most of the patients had the fixed conviction that they had been gassed and would usually describe all the details with convincing earnestness and generally with some dramatic quality of expression. Careful inquiry elicited the information that these soldiers came from areas in which there was some desultory gas shelling, which, however, never reached serious proportions. The amount of dilution was practically always great enough to provide an adequate margin of safety. It was further developed that these conditions were always initiated in about the same way. Either following the explosion of a gas shell, or even without this preliminary, a soldier would give the alarm of "gas" to those in his vicinity. They would use their masks, but in the course of a few hours a large percentage of this group would begin to drift into the dressing stations, complaining of indefinite symptoms. It was obvious on examination that they were not really gassed. Further, it was inconceivable that they should be malingerers. They came from battle-tested troops, veterans of the severe action on the Marne and the early hard fighting in the Aisne region. It is exceedingly probable that a number of factors which existed at that time acted together with the general effect of lowering morale and reducing inhibition to a state where any suitable extraneous opportunity was apt to be utilized by many as a route to escape from an undesirable situation. It differed from the manifestation of the personal preservative instinct in that it was in a sense a mass reaction and a subconscious rejection of a situation which, although decidedly uncomfortable, yet was not sharply threatening from the standpoint of physical danger. The troops were more or less inactive, practically merely holding a position, and the small amount of activity which occurred was more irksome and irritating than highly dangerous. Following on the heels of the advance at Chateau Thierry and the first rush in the Aisne region it was comparatively monotonous and lacked all those stirring and dramatic qualities which even in modern warfare attend more important military operations. Further, instead of a definite, easily understood objective such as they had been accustomed to, the minor activity which was not taking place seemed to the soldiers indefinite, uncertain, and apparently not aimed at a clear-cut objective. Again, too, for some time there had been a wide-spread feeling that the division was soon to be relieved and given a well-earned rest. When the day came on which the order for relief was expected, and word arrived that it was to be indefinitely postponed, the feeling of expectation and optimism gave way to disappointment and dissatisfaction. The relative inactivity gave abundant opportunity for endless thought and discussion among the men by which the mental unrest and uncertainty was rapidly disseminated and intensified. Finally the troops were beginning to feel the physical strain of four weeks' exertion under the most exposed and trying conditions. When these factors, no one of which was sufficiently strong to act alone, accumulated and combined they were evidently powerful enough to produce a wholesale effect.

The problem demanded immediate and energetic attention. It was obviously impossible to deal with each patient from the personal angle and give him extended individual attention. The drain on man power was being felt, and

there was a request from military superiors asking that these men be returned to the line as quickly as possible. Each man on admission was examined, assured that his symptoms were not serious, and given some simple suggestive treatment followed by hot food and a brief rest. Some hours later he was again examined, encouraged to feel that the treatment had had the desired effect, complimented on his improvement, reassured about his condition, and convincingly told that he would be able to return to duty on a certain day at some specified hour. From this point on symptoms were practically ignored. The patient now passed to a second tent where the conditions were rigidly military. Soldiers were usually required to wear their uniforms, and to observe all military courtesies, and they were under strict discipline. There was a round of duties to be performed under the supervision of a noncommissioned officer. In short, the hospital lacked about the only desirable features which were to be found at the front, namely, a relaxation of certain elements of military rule and routine duty. The method was successful. Only an occasional case proved refractory and required more intensive action. The basic idea was an attempt to impress on the patient's conscious mind that his ailment was not serious, and on his subconscious mind that the situation in which he now found himself probably offered no greater advantages over the one which he had recently left. No harshness was permitted, but no opportunity was given to lose contact with the life, duties, and responsibilities of a soldier. The wave of gas "hysteria," as the line officers insisted on designating it, receded from day to day, and ceased spontaneously at the end of eight or nine days.

When hostilities ceased, there was some doubt as to whether the services rendered by division psychiatrists were sufficiently valuable to justify their retention in the divisions. In the army of occupation, where there was a possibility that divisions might again be engaged in combat or at least be liable to a long period of service on foreign soil, no such question was raised. The other divisions, however, went back into areas previously used for training, and as rapidly as possible were sent to various concentration centers in preparation for their return to the United States.

During this period of waiting for return to the United States a great many policies which were considered of importance during the period of combat were reversed. For instance, it was unwise to conduct too vigorous a search for mentally defective psychopathic individuals in organizations about to return to the United States, as their discharge from the Army in any case was only to be a matter of several weeks. The mentally sick, of course, were sent, as before the armistice, to Base Hospital No. 214, at Savenay, for return to home territory, there to be hospitalized further or discharged from the service on surgeon's certificate of disability. The war neuroses had ceased to be a problem.

CORPS NEUROPSYCHIATRIC CONSULTANTS

As soon as the medical service of the corps became sufficiently well organized to require the services of corps consultants in psychiatry these were appointed. These consultants proved a valuable addition to the work of dealing with war neuroses in advanced formations. As it was impossible for a division psychiatrist to care for all the cases coming under his observation under condi-

tions of unusual stress, it was found feasible to attach to the corps, as temporary assistants to the corps consultant in psychiatry, additional medical officers with neuropsychiatric training. These he could dispose of as exigencies required, and in several instances an unusual flow of exhausted, frightened, and nervous men from the front was checked in triages by the extra officers who were available on this account to examine them and make recommendations as to treatment or other disposition. The corps consultant in psychiatry served an extremely useful purpose and his presence helped to insure the carrying out of a definite policy with reference to the care and evacuation of neuropsychiatric patients during combat. During quiet periods his services were likely to be fully occupied in working out a better organization for the next period of activity, helping in dealing with the medico-legal situations, questions of morale, and psychiatric problems which arose among troops themselves.

The following report of the consultant to the First Army Corps, dated November 25, 1918, covers a period commencing in July, 1918, and ending with November 11, 1918:¹³

FIRST ARMY CORPS

When the consultant in neuropsychiatry joined the First Army Corps in the latter part of July, 1918, its territory embraced all the area of combat in the Chateau Thierry sector. Two divisions were at that time on the front line—the 28th and 42d. Shortly afterwards the Third Army Corps was organized and part of the sector placed under their command.

There were no precedents to help or hinder, but the needs of the situation were obvious. A series of divisions were coming into the corps, taking up front-line positions, after a time withdrawn and replaced by others. Each division had its psychiatrist. Some of them had been with the division for a considerable period and had their duties well in hand and adequate opportunity to carry them out. In other instances, the work was not well organized and the psychiatrist was called upon to spend his time in doing duties that might be carried on by other medical officers while the duties that only he could perform most satisfactorily were left in abeyance. This all depended on the conception held by the division surgeon of the usefulness and responsibilities of the divisional neuropsychiatrist.

The chief surgeon of the corps held a high opinion of the importance of the work of the neuropsychiatrist, and always insisted that they be given every opportunity to do their work. A fine group of men like these officers needed only the opportunity in order to make themselves most useful. The corps consultant found, therefore, as his chief duty during the period of advance, frequent visiting of the divisions, surveying of the lines of evacuation, and the points at which the psychiatrist could work most effectively, and advice and encouragement to them as various problems came up. Owing to difficulties in getting about over the country, this apparently simple duty required a great amount of time, and until individual means of transportation were available it was frequently impossible to function with even normal speed.

In the St. Mihiel and Meuse-Argonne operations the First Army Corps was given three neuropsychiatrists, who might be moved from unit to unit as one division was replaced by another. It was excellent experience for men who were to become division neuropsychiatrists. Since they were always in active divisions, it tested admirably their ability to stand a long period of stressful activity. It also gave them the benefit of working with several more experienced officers in succession. At times these extra men worked with the division psychiatrist at the triage. In other instances a division might maintain two triages, and then the two officers divided these triages between them. In periods when the corps was not engaged in active combat these officers were withdrawn from the division and assigned to other duties.

The Army corps comprises a number of organizations aside from the divisions. It was highly important that these troops should be known to the corps neuropsychiatrist and that the medical officers and commanders of these troops should know where they could obtain

help on neuropsychiatric problems. This matter was dramatically illustrated by the case of the 53d Pioneers, an organization comprising a huge number of men unfit for military duties, a considerable number of them because of mental defect. Whenever time permitted, the corps neuropsychiatrist or one of his extra officers devoted some time to examining men in these organizations.

The First Army Corps developed in the Meuse-Argonne operation an institution known as the rest camp. The purpose of this was to take care of men who did not need actual hospitalization but were in need of a period of rest. In such a place there were always patients with mental problems. It is believed that a medical officer with neuropsychiatric training would be of great service in a rest camp. For a few days only was it possible to make such an arrangement, because of the exigencies of the service in the division.

A difficulty encountered was in the matter of evacuating the psychoneurotic patients in the right direction. During active hostilities it is quite impossible to control this matter to one's entire satisfaction, unless the so-called neurological hospital is near a group of hospitals so that ambulances are discharging all patients from a certain area at points from which they may be distributed. However, by following the matter as frequently as possible, we probably got a larger number of psychoneurotic patients into Army Neurological Hospital No. 3 than would have gone there otherwise. Attention was given also to the problem of getting back patients from the neurological hospital for active duty as soon as possible.

The work of the corps neuropsychiatrist was certainly no more taxing than that of the division officers, and probably less so. There were many satisfactions connected with it. It was often possible to give material assistance to the work of division consultants. If the campaign had lasted longer, it would have been possible to hold a larger proportion of neurotic cases in the rest camp, in division field hospitals, and in the field hospital of the Army corps; so that evacuations to the S. O. S. would have been fewer.

ARMY NEUROPSYCHIATRIC CONSULTANTS

Shortly after the organization of the American First Army, on August 10, 1918,¹⁴ it was decided that the Army surgeon should have consultants, including one for neuropsychiatry, but no such assignment was made until October 19, 1918, when the corps consultant for the Third and Fifth Corps was appointed consultant in neuropsychiatry, First Army. On the same day, a consultant in neuropsychiatry was appointed for the Second Army. After the armistice was signed, a consultant was appointed for the Third Army.

Army consultants in neuropsychiatry served too short a time to make available many records of their experiences, but the following summary of the conclusions reached as to the services that can be performed by such a medical officer in a field army is of interest. It represents the joint views of the two officers who served in this capacity in the American Expeditionary Forces:^a

THE WORK OF AN ARMY CONSULTANT IN NEUROPSYCHIATRY

The army consultant needs some executive ability and preferably a considerable executive experience. His work is no more taxing than that of the consultant in the division or Army corps, but since the projects with which he deals are more numerous and more varied, considerable training in hospital and organization activities will not come amiss.

There are in the army a number of well-organized units—the divisions—each with a consultant. The army consultant during active operations had to visit these divisions from time to time and to ascertain whether the division psychiatrist had opportunity to function to the best of his ability and whether he was provided with the information that he needed in order to fulfill his duties. The hospital and other facilities that were afforded him, the

^a Lieut. Col. E. G. Zabriskie, M. C., was appointed consultant in neuropsychiatry, First Army, Oct. 19, 1918; Lieut. Col. John H. W. Rhein, M. C., was appointed consultant in neuropsychiatry, Second Army, on the same date.—*Ed.*

obstacles, if any, to his handling of such cases as can be properly treated in the division hospitals, the direct evacuation to the most favorable point of those who must leave the organization, were problems that required attention. Division psychiatrists sometimes have to leave their organizations for adequate reasons, and it is imperative for the army psychiatrist to obtain early information of such changes in order to provide substitutes to fill such vacancies.

If in the army there was an army corps that had a consultant in neuropsychiatry, the relation of the army consultant to him was somewhat similar to that with the division psychiatrist. During active operations a very useful arrangement was found to be the placing of some additional psychiatrists in the army corps. These men could be sent from division to division and located at other strategic points in the corps organization according to the need for them in order that all troops might be able to receive the attention of a psychiatrist. Furthermore, these men were trained in this way for taking posts of independent responsibility themselves later.

The army consultant bore direct responsibility for psychiatric matters in troops that are not included in divisions. This was often a taxing and time-consuming duty, for such troops whether attached to the corps or to the army were scattered and not always easy to locate. Until the acquaintance of their regimental surgeons has once been made, such troops may be sadly neglected, allowing conditions to arise that present a very important element of danger. This may be the case in any branch of medicine. Men have been found in critical military positions suffering from advanced pulmonary tuberculosis, having grave deformities, or serious cardiac disease. Failure by them to carry out military duties might be precipitated by no fault of the man but with considerable embarrassment to his comrades. Likewise, in the mental field, feeble-minded men, unable to tell the right hand from the left, have been intrusted with rifles and put on guard duty, endangering their whole organization through their inability to understand and carry out commands. These situations were quickly relieved by the attention of a medical officer with some knowledge of mental disorders. Furthermore, there were many prisoners to be examined, and this duty fell to the army psychiatrist, except in so far as he could arrange through the chief surgeon to bring the cases to the attention of division or corps psychiatrists.

To the army consultant falls the duty of seeing that prisons are surveyed occasionally, and also the duty of examining general courts-martial prisoners or arranging for their examination by psychiatrists who happen to be located in the neighborhood. Arrangement ought to be made by which a report of the name and location of all such prisoners will be sent to the chief surgeon of the army. These lists will then receive the attention of the army consultant in neuropsychiatry.

Another set of important duties and responsibilities had to be with the hospital organizations of the army. At convenient points neuropsychiatric units were established. Without these the psychiatric problems and in many instances organic neurological problems would not have received the attention that they deserved. Convenient buildings and satisfactory equipment were of some importance, but of far greater importance was trained personnel. Experienced medical officers and enlisted men can convert almost any type of building into a place suitable for the handling of mental problems. Two tendencies had to be combatted: (1) the tendency through lack of understanding to minimize the importance of these organizations and, therefore, not to transfer to them the patients with mental difficulties; and (2) the tendency to take away from these units the very capable personnel and assign them to other duties, important perhaps, but as readily performed by others without special training in neuropsychiatry. Fortunately, when these units were once established there was no question about their continuance or their usefulness. Their value became apparent to the whole medical organization and to the judge advocate's department and the General Staff. It is nevertheless necessary for the army consultant to make rather frequent visits to these hospital units and ascertain if they are permitted and encouraged to function at their highest point of efficiency.

The army consultant had important functions in connection with the problem of evacuation. He had to be on the watch to see that the patients who by temporary treatment could

soon be returned to duty, were not sent to hospitals at such distant points that return to their organizations would be delayed and the patients' symptoms become fixed through improper handling. This matter was largely one of routes of ambulance evacuation. He had to know about the routing of hospital trains in order to arrange suitable times for the evacuation of patients by the earload or more to neuropsychiatric centers at points distant from the army area. Unless this was done, considerable numbers of neuropsychiatric patients were unloaded in hospital centers that were not equipped to provide for them. This caused much loss of time and delay in the hospital service itself.

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CHAPTER III

ARMY NEUROLOGICAL HOSPITALS

Early in the medical history of the American Expeditionary Forces, as pointed out in Chapter I, the conclusion was reached that success in dealing with the loss of man power and the menace to morale caused by the war neuroses could not be attained in the American forces unless division psychiatrists had close behind them special hospitals in which could be received cases that promised well for recovery but obviously required longer care than could possibly be given in divisional hospitals. Both the British and French had recommended the establishment of some type of advanced special hospital for the treatment of psychoneurotic reactions among combat troops. For example, Léri,¹ who had conducted work in an advanced French neurological center at Nubecourt, reported excellent results in these cases when several weeks' treatment could be instituted within the zone of active military operations. Working in the neuropsychiatric center of the second French Army, he reported that 91 per cent of the cases received from July to October, 1916, were returned to the fighting line.

Roussy and Boisseau,² describing the work of an army neuropsychiatric center, said the results obtained after six months showed that a neuropsychiatric center could render incontestable services to an army from both a medical and a military point of view. For functional nervous cases it avoided sojourns (more dangerous the more they were prolonged) in the hospitals at the rear, where these patients were generally lost. It allowed of the treatment of other nervous or mental cases that were quickly curable and for the direct evacuation to the special centers in the interior of those more seriously affected. This idea was confirmed by English observers.³ A psychiatrist who had the opportunity of working in a casualty clearing station of the British Expeditionary Force in France reported that of 200 nervous and mental cases which passed through his hands in December, 1916, 34 per cent were evacuated to the base after 7 days' treatment and 66 per cent returned on duty on the firing line after the same average period of treatment. Four of these cases reappeared at the same casualty clearing station.

During the latter part of August, while the St. Mihiel operation was being planned, all medical and surgical arrangements for the care of men at the front were carefully reviewed in terms of the experience of the previous four months of active participation by American troops in the fighting in France. Up to that time American troops had always operated in the British and French organizations,⁴ which had naturally determined the type of many medical procedures. Now came the opportunity for putting into effect some American plans of work in the field. The beginning of these operations was the first favorable time, therefore, for inaugurating this new type of hospital. Con-

sequently, it was decided to establish at that time a short distance behind the field hospitals, neurological hospitals for the care of war neurosis patients who required more than a few days rest in the field hospitals, and who at the same

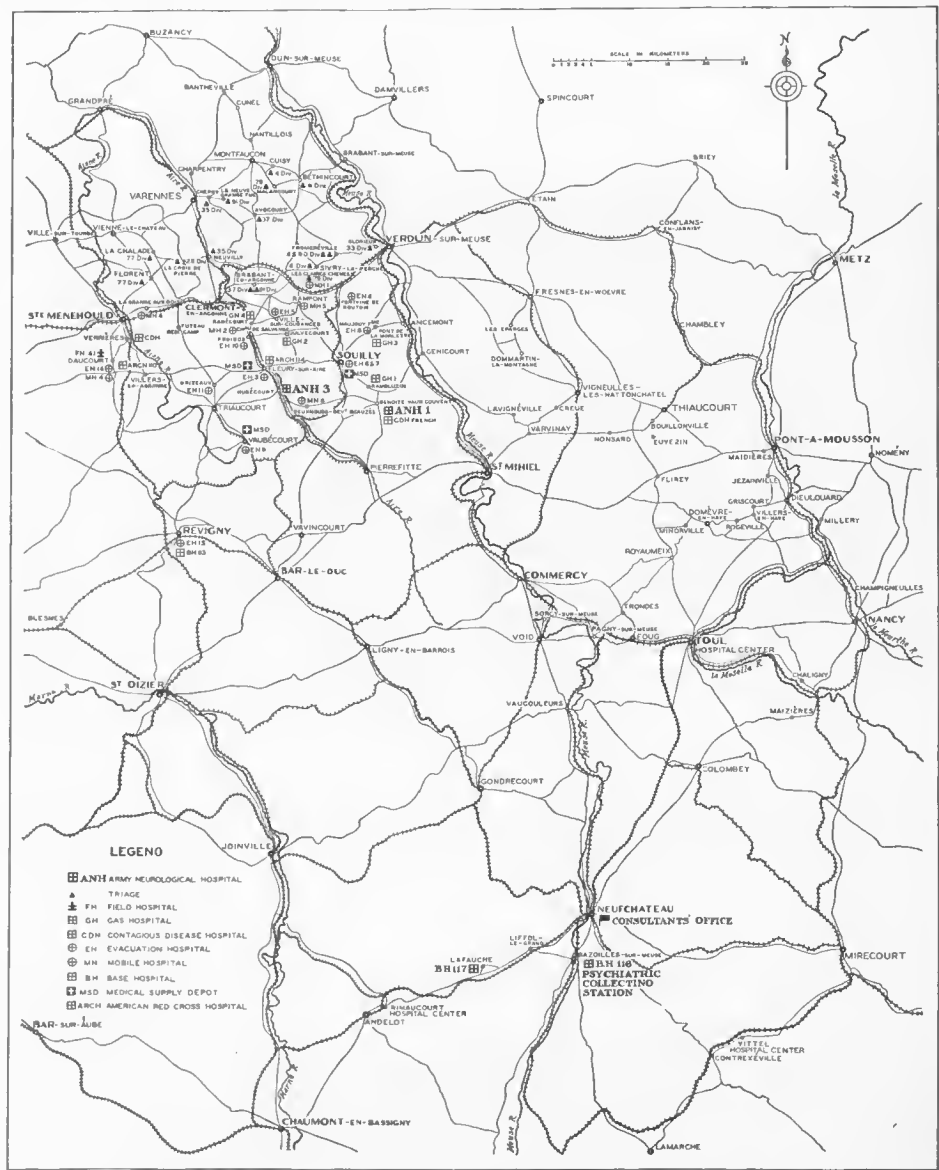


FIG. 1.—Map showing the locations of army neurological hospitals during the Meuse-Argonne operation

time, if kept in the zone of active fighting, would recover, within 2 or 3 weeks, sufficiently to permit them to be returned to their organizations. Three such hospitals were established.⁵

ARMY NEUROLOGICAL HOSPITAL NO. 1, FIRST ARMY^a

The hospital at Benoitte Vaux, Army Neurological Hospital No. 1, which previously had been used by the French as an "ambulance" for venereal diseases, consisted of 150 beds. The advantages of taking over this hospital for use with neuropsychiatric patients was brought to the attention of the corps surgeon, First Corps, by the senior consultant in neuropsychiatry on August 26, 1918.⁶

It was first suggested that a corps field hospital be stationed at Benoitte Vaux with its own commanding officer, adjutant, and personnel, securing the special medical personnel from a "pool" of neurologists and psychiatrists collected at Base Hospital No. 117 for emergency service with advanced formations.⁶ This proved not to be feasible on account of the medical and surgical needs of corps troops. The hospital was turned over to the First Army before the end of August, 1918, and on September 2, 1918, an advanced neurological hospital was established there.⁷ It being impossible to detach the personnel of a corps field hospital, as was originally suggested, five commissioned officers and eight enlisted men, stationed at Base Hospital No. 117, proceeded to Benoitte Vaux for temporary duty.⁷ The commanding officer at Base Hospital No. 117 furnished a truck for transportation, and on the morning of September 3 the detachment arrived and proceeded to prepare the hospital for the reception of patients. Seven other enlisted men were secured, and on September 6, it was possible to send the following memorandum to the chief surgeon of the First Army:⁸

1. The hospital at Benoitte Vaux which has been designated Neurological Hospital No. 1, First Army, is ready to receive patients, the officers and enlisted men being on duty there and all supplies including rations on hand.

2. The hospital at Toul which might be designated Neurological Hospital No. 2, First Army, if you approve, will have the personnel by tomorrow and will be ready to receive patients by Sunday.

3. Staffing these hospitals has greatly depleted Base Hospital No. 117, which will be called upon to care for at least 1,000 patients, the overflow at Rimaucourt being only 500.

4. It is therefore necessary for the hospital at La Fausche to receive 28 men from your personnel from the special training battalion as soon as convenient.

5. I believe that with these advanced facilities it will be possible to establish a very different record in the loss of effectives from nervous conditions, which, unfortunately, we were compelled to be content with during the last period of extensive fighting.

6. For several days I will be at Toul and in the divisions in that vicinity.

Benoitte Vaux, a tiny French village, consisted of 45 houses, with a population of not more than 75 civilians. In the village was a church, an abbey, and a few little shops. The abbey, supplemented by some frame barracks across the road, had been used by the French Army as a hospital for nervous diseases. During the recent active operations carried on by the French, the village had been used as a rest area.

The location of Neurological Hospital No. 1 was particularly well adapted for the purpose to which it was to be devoted. The main evacuation center for

^a Except as otherwise indicated, the following statements concerning Army Neurological Hospital No. 1, First Army, are based on "History of Army Neurological Hospital No. 1, First Army," by the commanding officer of that hospital. Copy on file, Historical Division, S. G. O.

the Verdun front was Souilly, $7\frac{1}{2}$ miles away, which was also the site of a number of evacuation hospitals.⁹ An excellent road connected Benoitte Vaux with the main route between Verdun and St. Mihiel, while only $9\frac{3}{4}$ miles to the west was the main route between Verdun and Bar-le-Duc, upon which route a little later the neurological hospital at Nubecourt was to be established. At the time of the commencement of the St. Mihiel operations, the front line was $5\frac{1}{4}$ miles away.

The hospital consisted of 10 French barracks and a number of small out-buildings, which were little more than huts. One barrack was used both as the admission ward and as a ward for officer patients. It was divided into several rooms accommodating one to four patients each with an additional small ward for six patients. Eight other barracks were used for patients who were enlisted men. Each contained 25 cots. These barracks were arranged in three rows of three each. The first two rows were connected by an inclosed corridor. One of the barracks was used for bathing purposes and one for a storehouse. The office of the commanding officer was a small two-room barrack adjoining this group of buildings. The hospital personnel were quartered in several small buildings which surrounded the group of barracks to the west and to the north. The kitchen was in the rear of the group. Cooking facilities consisted of French brick stoves, and wood was used for fuel. During the French occupation of this hospital, gardens had been planted in which onions, carrots, and lettuce were growing in sufficient amounts to provide fresh vegetables for at least one meal a day for the entire hospital.

On September 20, orders were issued to 5 officers and 15 enlisted men, who were stationed at Neurological Hospital No. 2 at Toul, to report for duty at Army Neurological Hospital No. 1 at Benoitte Vaux. Accordingly, on the night of September 21, these officers and 30 enlisted personnel traveled in ambulances, arriving at 3 o'clock in the morning. The original 4 officers and 30 enlisted men were synchronously transferred on September 22 from this hospital at Benoitte Vaux to Neurological Hospital No. 3 at Nubecourt. The newly arrived officers and enlisted men remained for the purpose of operating this hospital.

During the month of October, this hospital continued its activities while the Meuse-Argonne operation was under way, the number of cases admitted being 608.¹⁰ Of this number, there were 44 officers, 10 of whom were returned to duty, 1 was transferred to Base Hospital No. 116, 31 to Base Hospital No. 117, and 2 to medical centers.

During the month of November the admissions were considerably less than during the previous month, or even during September.¹¹ This was due to the change in character of the fighting (while battle activities continued), to the fact that the distance between the hospital and the front line was constantly increasing and to the cessation of hostilities on November 11. The number admitted during November was 152.

Army Neurological Hospital No. 1 operated under considerable physical disadvantages. There was no laundry connected with the hospital until the latter part of October. Until then, the laundry was sent to near-by American hospitals. It was done sometimes at the Gas Hospital at Rambluzin, and at

other times at Evacuation Hospital No. 6 at Souilly. By the end of October, a laundry was constructed on the grounds, a large fireplace was built for boiling clothes, and a mammoth tub was constructed in the workhouse of the hospital. Tubs were also put in place for rinsing, and convalescent patients were detailed to attend to this work. The average output a day was approximately 900 pieces.

Transportation here, as elsewhere in the American Expeditionary Forces, was a source of great difficulty. To get supplies of fuel, water, and rations it was necessary to go to Souilly, a distance of $7\frac{1}{2}$ miles. The evacuation of patients to trains, to organizations, and to the rear still further embarrassed the transportation facilities. Upon every occasion when transportation was needed, a request had to be sent to the transportation officer at Souilly that a truck be sent for this purpose. Since a truck was not always available at the time it was needed, this arrangement was very unsatisfactory. Later, about the middle of October, a truck was assigned from Souilly, to be used conjointly with Neurological Hospital No. 3 at Nubecourt, about 15 miles distant. This plan proved to be more satisfactory. An ambulance was also assigned to the hospital and was used largely for evacuating patients to Souilly. Sometimes, when the truck was not available, it was used to obtain supplies.

Except on very few occasions, it was not difficult to obtain a sufficient supply of clothing for the patients. The majority of the men, upon being returned to their organizations, were equipped with completely new outfits with the exception of rifles.

In the latter part of the month of October a workshop was put in operation. A reconstruction aide was detailed from Base Hospital No. 117 to conduct this department.

Over 60 per cent of the patients admitted to Army Neurological Hospital No. 1 were restored within an average of 10 to 14 days to a state of apparent stability. By this is meant a condition in which they acknowledged that they felt well, in which they expressed themselves as willing and anxious to return to their organizations, and in which to all appearances they seemed to be able to do so.

The plan employed to bring about these therapeutic results included every psychotherapeutic device, but emphasis was placed chiefly upon persuasion, suggestion, and a simple, practical psychological reeducation. The officer of the day admitted all patients. It was his duty to explain to the soldier in the receiving ward upon admission the exact nature of his condition, and to reassure him as to the prognosis. There was discernible almost immediately a relaxation of the tension characteristic of practically all the patients. The soldier was relieved of a good part of his anxiety. He was then bathed, fed, and put to bed; whereupon he usually fell into a profound slumber which lasted 36 to 48 hours. Then, after a careful examination of the patient by the ward neuro-psychiatrist, it was the duty of the latter to talk to the soldier, explaining the mechanism of his condition and treating by suggestion or persuasion such symptoms as were present. The next step in the therapeutic procedure was an interview by the commanding officer. The latter took the patient into a room by himself, went carefully with him over the history of his troubles, explained

the nature of his symptoms in a way that robbed them of any residue of horror or mystery, and finally gave reassuring suggestions. After a brief period of rest under these conditions, usually lasting three or four days, the patients were put on a schedule which occupied the whole day. This included periods of rest, of exercises and calisthenics graduated according to the condition of the patient, and of recreation, which included games and group singing. In from 12 to 14 days from 60 to 75 per cent were fit for front-line duty.

Sometimes, unfortunately, it was not possible to evacuate the patients at once as they should have been when their recovery had reached this point, due to the difficulty in obtaining transportation, inability to locate the headquarters of their organizations, or other similar reasons. As a result of this delay, in a small number of cases, vague hypochondriacal phenomena developed which became more fixed the longer the patients remained in the hospital.

In handling the enlisted men it was originally planned to have an admission ward and then graduate the patients through a series of wards as they improved, the end ward being occupied by recovered cases awaiting transportation to duty. With the pressure of case admissions (which not infrequently ran more than 30 a day, the hospital at times containing more than 100 cases over its normal capacity) this plan was found impracticable. And so cases were admitted to each ward, with the exception of one reserved for ready-for-duty cases. An added advantage in this procedure was that the ward physician saw his patient all the way through.

The patients on admission were seen by the officer of the day and obviously unsuitable (medical and surgical) cases were sent to evacuation hospitals near by. "Exhaustion" was the label of most of the medical cases and often it required a day's observation before a definite diagnosis could be made and transfer effected. Many of the cases as they were seen in the admitting office presented coarse tremors and ties and other hysterical symptoms, and it was soon learned that much therapeutically could be done immediately by simple suggestion and explanation and reassurance in the admitting office. Not infrequently a well-marked coarse tremor of the extremities would be cleared up before the patient had his routine admission bath. The majority of cases on admission were tired out, and at least a day in bed was a routine necessity, the beneficial effect of which was very striking. As soon as possible afterwards the patient was gotten up and about and assigned to routine duties.

Since the number of hospital enlisted personnel was small, and there was so much of the routine hospital fatigue duty to do, the patients were never at a loss for occupation, as far as needed work was concerned. Drills and practice marches were used at first under the charge of an officer patient, but these later were superseded by work detail, with an initial daily setting-up exercise under a sergeant. There was a variable percentage of work dodging, but on the whole the patients were fairly industrious and idleness was not the problem here that it was in many of the base hospitals. Latterly an occupation shop was started under the supervision of a trained worker, and the activities were mainly with wood and metal work; it proved of considerable interest to the patients, and was valuable, especially for the cases with tremors and difficulty in concentration.

The general treatment of the war neuroses, summed up, was the following: Rest when indicated, persuasion, suggestion, work, and psychological reeducation. In dealing with the cases fresh from the line, after one's experience with the older cases, it was most striking how much more suggestible the former were seen to be. Hysterical symptoms that might require hours of treatment in a base hospital could frequently be cleared up by suggestive therapy in a few minutes in a fresh case. It was the policy of the hospital not to transfer cases deemed unsuitable for immediate front-line service to Base Hospital No. 117 as long as gross objective, hysterical symptoms persisted. This suggestibility worked both ways, and unless the therapeutic side was pressed the symptoms tended to become rapidly fixed. But the advantage was with the physician.

Upsetting battle dreams were likewise easier to clear up in the fresh cases. These battle dreams were among the few symptoms that seemed to be as marked in the fresh neuroses as in those longer from the line, and they were the most common complaint. (They were frequent in fresh wounded cases as well.) Some patients would stay awake night after night to avoid them. Usually simply explaining the dream mechanism and urging the patient to ventilate and mentally assimilate his affect-charged battle experiences rather than "to keep them out of the mind" during waking hours was quite sufficient therapy; very rarely were hypnotics required.

One of the most valuable assets in the treatment of the neuroses was the creation of a ward atmosphere of cure. The patients were quite observant of one another, and a cured case which they had seen from the beginning was a most useful asset. Once the atmosphere of cure was created a part of the therapy became automatic. The ward atmosphere depended almost entirely on the ward surgeon, and it was most striking how quickly the efficiency of the doctor was reflected in the therapeutic results of his ward. Certain members of the staff had had the advantage of training at Base Hospital No. 117 under the stimulating influence of the medical director there.

In every soldier probably there was some degree of mental conflict between, on the one hand, the instinct of self-preservation and, on the other hand, the more socialized "carry-on" urge and desire for social esteem, with regard to front-line service. There were three possibilities: First, the "carry-on" driving force predominated, which was the condition of the normal soldier, and of not a few neurotic individuals. Secondly, if the "carry-on" force was weak or absent, a neurosis might not develop because the conflicting forces were too unequal and there was little tendency to symptom fixation. These were the fear cases, and certain of them were very honest individuals in their "I can't stand the gaff" attitude. Thirdly, when the two opposing forces were approximately evenly balanced, a soldier might perform his duties fairly well until some environmental factor, such as a shell explosion, upsetting emotional experience, fatigue, or minor trauma, disturbed that balance in favor of self-preservation, and a neuroses developed. The symptoms of the neurotic, while out of proportion to the more immediate upsetting event, were usually not out of harmony with it; for example, the relationship between a slight hip trauma and a subsequent functionally paralyzed leg; between a somewhat thin concussion experience and a headache and tremor, or, perhaps, deafness;

between an upsetting emotional experience and the development of an anxiety state, etc.

Undoubtedly many soldiers carried on after the same sort of experiences as sent most of the neurotics to hospitals. The cumulative effect of these upsetting experiences must have been large and in time might break men of good balance and make-up. A number of cases held on until their divisions were relieved from the line and then snapped when the sustaining power of action was removed.

Life itself being represented by a series of adjustments and compromises between the individual and his environment, the war neuroses furnished no exception. At one extreme was the pure concussion group, and allied to this were the cases in which trauma and exhaustion played the most prominent part; at the other extreme were the fear cases, in which the personal element predominated. Between these extremes fell the bulk of the neuroses, the environmental and personal factors participating in varying proportions, seizing and fixing on the most available experience, as shell explosion, fatigue, trauma, upsetting emotional event (killed comrades, etc.).

Neurotic symptoms were quite natural after many of these experiences, and consciousness probably played a very minor part, if any, in their incipency. But into the maintenance of the neuroses, the conscious factor entered to a greater extent. Any doubt as to this was removed by the decidedly ameliorating effect of the armistice on the majority of the cases. The fear-group cases were largely conscious of the difficulty all the way through, but these were not cases of malingering, because there was no conscious simulation. There may have been a degree of malingering in some of the neuroses, but pure malingering undoubtedly was rare.

In civilian cases of neuroses, along with changing the patient's attitude toward himself, it is nearly always possible to modify the environment in which the neurosis arose. The problem of the war neuroses was simpler and more difficult—simpler to the extent that the conflicting forces were less obscure, and more difficult in that the aim of treatment was to enable the patient to be sent back to the same precipitating environment, i. e., the front line. The soldier's neurosis was his reaction and adjustment to an unbearable situation, and it had a double-barrelled potency: To get him out of the situation and keep him out of it. This last factor probably accounted for the tendency later to symptom fixation, and this was the more immediate therapeutic problem. A simple mechanistic explanation of the neuroses was helpful to the patient. But more valuable from a therapeutic standpoint was the effect of a definite attitude on the part of the ward surgeon that the goal of treatment of the war neuroses was return to duty.

There were three avenues for the disposal of patients from the army neurological hospital: Return to duty; transfer to Base Hospital No. 117, the special base hospital for the neuroses; and transfer of the medical, mental, and surgical cases to other hospitals where more appropriate care and supervision could be given them.

The primary function of the hospital was to return as many cases as possible to duty with their divisions, and in as short a time as possible. The average

duty case was in condition to go back within 10 days, although there were exceptions. It is impossible to estimate from the length of stay in the hospital the time required for recovery because most of the recovered cases would have to wait over in the hospital, sometimes for several weeks, until a particular division could be reached. The hospital received most of its cases from the north and east of Verdun, and the delay in return to duty was more marked when the divisions moved from sector to sector. Just before the armistice was signed, arrangements were made to return the duty cases to corps replacement camps rather than to their divisions, and this facilitated matters greatly.

The question of return to duty was complicated by the possibility of relapse. On the 532 cases returned to duty, 15 cases were known to have come back to the hospital with relapses; none of them lasted more than one day under fire. Soon after the opening of the hospital 22 cases were returned to duty in one group and within 24 hours 11 of them (included in the above 15) were sent back with an assortment of hysterical symptoms. They had spent the night in a village that was heavily shelled. This experience made one more cautious in the selection of line-duty cases. When a division was in a large area and participation in heavy fighting followed recoveries were more durable.

The relapses were all cases of hysteria and hyperemotivity (fear), and these were the two groups that presented the main problem in selection for duty. With the exception of certain of the concussion cases, there was in the general attitude of the patients in the hospital a distinct absence of any keenness of desire to return to front-line service. The question before the hospital staff with nearly half of the hysteria and fear cases was: Which is wiser from the standpoint of army efficiency, to send these men back to the front line on the chance that they will carry on or to send them to Base Hospital No. 117 to be reclassified as labor troops? One's first impulse was to carry out the former alternative, especially if one were dealing with a plain case of fear. There was another point of view to consider, however, and that was the line officer's. Even if the hysterical and fear cases were not contagious in the front line, the chances were that they would not be individually dependable. There were exceptions, of course. Furthermore, at a time when every available bit of transportation was needed for wounded men, a seat in an ambulance for a relapsed nervous case seemed rather superfluous.

Before troops went into the front line for the first time it was a hazardous proposition to predict which individuals would develop "shell shock." Men who had been visibly "on edge" often carried on well, and vice versa. The front line itself was the only test. There was a history of neuropathic make-up or neuropathic stock in about 40 per cent of the cases of war neuroses admitted. In 100 case records selected at random the family history was positive in 38 and the personal history in 40. Much depends on the criterion for the term neuropathic. This 40 per cent included the cases with any definite history of nervous or mental anomalies whatever in stock or make-up. Certain of the ward surgeons went into this question carefully, others more casually; so the 40 per cent is only an approximation.

The average American soldier's attitude toward "shell shock" had a large proportion of tolerance and curiosity in it. An attempt was made to abolish

the term. Although this could be done in official communications, it was manifestly impossible in ordinary speech. Much more profitable was the dissemination of information among the troops as to just what "shell shock" meant. The divisional variation in the number of such cases was very striking—it occurred in inverse ratio to the morale. Among the patients themselves there were two main attitudes. The first was to this effect: "You're a long time getting it; but once you get it, it's got you"; and the second: "It's easy to get and easy to get over." The majority of them agreed on one point—they were unfitted for future front-line service. This attitude was one of the main problems to combat in the neuropsychiatric hospitals.

It was essentially the unfavorable type of neurosis that was evacuated to Base Hospital No. 117; that is, unfavorable at least as far as any immediate return to front-line duty was concerned; and so the army hospitals made the work at Base Hospital No. 117 more difficult in this way but operated favorably through having exposed these patients early—often a few hours after their breakdown became noticed—to a psychiatric point of view. A number of cases were sent to Base Hospital No. 117 to be reclassified, inasmuch as only class A duty was possible from the army hospitals. The general level of intelligence of the neurotic patient was certainly not below the average, and the vast majority of those who were unfit for front-line service were quite efficient workers in the base sections.

The officer patients, 66 in number, were included in the figures already discussed. On the whole they presented distinctly less favorable material for return to duty than did the enlisted men. There was one feature common to nearly all of them on admission—fatigue. Seventeen of the 66, or 25 per cent, were returned to duty as compared with 61 per cent of the enlisted men. Another factor entered into the selection of duty cases here, for if an enlisted man relapsed it was more or less of an individual problem; while in the case of relapse of an officer during the prodromal period, his wavering might affect more than himself. However, with most of them there was small choice; they were unfit for return to front-line commands.

The following is a summary of officer cases:

	Duty	Trans-fer	Total		Duty	Trans-fer	Total
Hysteria.....	1	14	15	Observation, mental.....	0	2	2
Neurasthenia.....	5	8	13	Exhaustion.....	1	0	1
Hyperemotivity (state of anxiety; funk).....	3	5	8	Concussion neurosis.....	1	0	1
Exhaustion neurosis.....	3	5	8	Neuritis (musculospiral).....	0	1	1
Traumatic neurosis.....	1	3	4	Pneumonia.....	0	1	1
Anxiety neurosis.....	0	3	3	Influenza.....	0	1	1
Psychasthenia.....	0	3	3	Gas neurosis.....	0	1	1
Concussion by explosion.....	2	0	2	Psychoneurosis.....	0	1	1
				No disease.....	1	0	1

There were but two pure concussion cases among the 66 officers and both returned to duty, as did the single case of simple exhaustion. The hospital stay of these three cases, in which the causative factor was so acute and strenuous, ranged from three to seven days.

Hysterias and neurasthenias predominated and there was a distinct "can't-stand-the-gaff" attitude among these and the majority of the other cases of neuroses among the officer patients.

Some of the crudest cases of hysteria in the hospital were found among the officers. More striking differences existed in neurasthenia and psychasthenia; the former was five times as frequent among the officers as among the men, and of the latter, three of the four cases seen were officers.

The following list is a comparative percentage list of the neuroses as they occurred among the officers and enlisted men:

	Officers	Enlisted men		Officers	Enlisted men
	<i>Per cent</i>	<i>Per cent</i>		<i>Per cent</i>	<i>Per cent</i>
Hysteria.....	22	30	Anxiety neurosis.....	4	2
Neurasthenia.....	20	4	Psychasthenia.....	4	.1
Hypermotivity (state of anxiety; funk).....	12	13	Concussion neurosis.....	1.5	6
Exhaustion neurosis.....	12	6	Hypochondriasis.....	0	2
Traumatic neurosis.....	6	11			

The following tabulation summarizes the disposal of cases, by months:

	Return to duty	To Base Hospital No. 117	To other hospitals
September, 1918.....	22	17	15
October.....	230	226	67
November.....	280	96	42
Total.....	532	339	124

In addition to these there were 5 desertions and 3 deaths, making a total of 1,003 cases. The 124 cases which were transferred to other hospitals (medical, surgical, and mental observation) may fairly be eliminated as being complications in a hospital that had for its special problem the emergency treatment of the war neuroses. Of the cases which may properly be included under the term war neurosis, 61 per cent were returned to front-line duty.

CLINICAL ASPECTS OF CASES ^b

During the period from September 26 to November 11, 1918, 1,003 cases passed through Neurological Hospital No. 1 at Benoit Vaux. These patients were relatively fresh cases, admitted usually within 24 hours after they were sent from their divisions. The more favorable cases—those which could be returned to duty within a few days, especially cases of exhaustion—were treated by division psychiatrists in the field hospitals as far as possible. Consequently, few cases of pure exhaustion were received in Army Neurological Hospital No. 1.

^b Based upon a report made by the commanding officer, Army Neurological Hospital No. 1, First Army, to the senior consultant in neurology, A. E. F., undated. Copy on file, Historical Division, S. G. O.

Clinical summary of 1,003 cases admitted

War neuroses.....	818
Concussion by explosion.....	10
Gas.....	2
Gunshot and shrapnel wounds.....	3
Psychoses, observation.....	52
Epilepsy, observation.....	22
Neuritis.....	10
Organic nervous disease.....	1
Belladonna poisoning ^c	13
Acute infections.....	52
Miscellaneous.....	20
Total.....	1,003

There were five cases of gunshot or shrapnel wounds altogether, and two of them were too slight to require surgical dressing. One of the remaining three had a finger wound (gunshot, right fourth finger). This was the only possible self-inflicted wound case admitted and there was no corroborative evidence here. Another case had multiple shrapnel wounds and was transferred immediately; and the last case sent in as an epileptic, proved to have a shrapnel fragment in the right parietal region. The common observation that wounded men do not develop "shell shock" was well borne out.

The 74 cases which were psychiatric or epileptic, were evacuated as speedily as possible to a special hospital (Base Hospital No. 116, at Bazoilles) for further mental observation. The 10 neuritis (unwounded) cases showed the following involvement: Facial, 3; musculospiral, 1; ulnar, 1; multiple (post-diphtheritic), 5. Included among the acute infectious diseases were one case of epidemic cerebrospinal meningitis and two cases of acute anterior poliomyelitis, one of the latter possibly syphilitic in origin. There was one case of organic nervous disease (an early amyotrophic lateral sclerosis), and this, together with one uncomplicated case of mental deficiency that passed through the hospital, speaks well for the efficiency of the neuropsychiatric weeding out in the camps in the United States. A small number of other mental defectives was admitted, but they were all neurotic as well.

The acute infections were admitted mostly as cases of "exhaustion." This was especially true of the pulmonary cases, eight of which proved to be lobar pneumonia. There were three deaths in all in the hospitals; two from lobar pneumonia, and one case (an Austrian prisoner) died on the day following admission, from gas poisoning, probably phosgene.

The 10 cases of concussion by explosion were differentiated from the war neuroses because they showed no neurotic feature whatever, and from their histories there was no reason to believe that any factor entered into their causation other than concussion. Of these 10 cases, 8 were returned to duty. The other two were transferred to a surgical hospital—one because of the possibility of a fractured skull and the other because of a complicating superficial abscess of the right temporal region.

^c The belladonna poisoning cases were caused by eating belladonna berries found in the woods, most of the cases being admitted in a very active toxic delirium.

There was no evidence of organic nervous disease in any of these cases, and most of them were convalescent when admitted. The diagnosis depended largely on the history, the patient's condition, and the absence of neurotic features. The following case is an example:

Pvt. J. C., 4th Infantry. Age, 26; civilian occupation, locomotive engineer. The patient's family and personal history were negative and his make-up was normal. He was drafted in May, 1918, went to France the following August, and was sent with replacements to the 3d Division in September. He carried on well and showed no undue reaction to shelling. On October 10 he was knocked down by a shell but was not unconscious, and continued his duties. On October 21, during a barrage, he remembered vaguely running for a shell-hole. "There was a kind of puff and I didn't know any more until I came to and it was dark"—evidently an initial period of unconsciousness lasting some hours. He had a violent headache and was dizzy, weak, and shaky. He remembered vaguely being carried on a stretcher and remembered the triage on the following morning. He lost consciousness again for several hours at the triage. Two days later he was admitted to the neurological hospital in a semicomatose condition, from which he gradually emerged on the following day. His memory from the time he left the triage until his arrival at the hospital was very hazy. He was in fair physical condition and there was no sign of organic neurological disease. His main complaints were headache, dizziness, weakness, and shakiness, the last being more subjective than objective, although he had well-marked coarse hand tremor. He was up and about the third day in the hospital, and by the sixth day his complaints had cleared up entirely, with no especial treatment. He was anxious to return to his outfit, and this was done 10 days after his admission to the hospital.

As stated above, of the 1,003 cases admitted, 818 were classified as war neuroses. The classification followed was essentially that formulated by the medical director of Base Hospital No. 117. (See p. 355.) Aside from the value of this classification (inasmuch as about one-third of the cases were evacuated to Base Hospital No. 117) it was very helpful to have a common language. This was primarily a working classification which conformed to the Medical Department diagnosis requirements, and was not merely an attempt to pigeon-hole the cases. It was fully understood by all that it lacked many of the requirements of accurate psychiatric work.

	September		October		November		Total	
	Duty	Transfer	Duty	Transfer	Duty	Transfer	Duty	Transfer
Concussion syndrome.....	19	1	21	0	14	0	54	1
Concussion neurosis.....	0	0	14	24	13	3	27	27
Exhaustion neurosis.....	0	0	22	8	29	3	51	11
Traumatic neurosis.....	0	0	51	8	40	7	91	15
Gas neurosis.....	0	0	1	1	0	1	1	1
Hysteria.....	2	6	52	93	103	41	157	140
Neurasthenia.....	0	1	13	14	9	13	22	28
Hypochondriasis.....	0	0	0	8	6	3	6	11
Anxiety neurosis.....	0	2	1	18	3	0	4	20
Psychasthenia.....	0	0	0	3	0	1	0	4
Effort syndrome.....	0	1	0	3	0	1	0	5
Anticipation neurosis.....	0	1	0	6	0	0	0	7
Hyperemotivity, state of anxiety (funk).....	0	0	28	40	43	24	71	64

The following list shows the percentages of the various neuroses returned to front-line duty (based on the preceding table):

	Num- ber of cases	Percent- age returned to duty		Num- ber of cases	Percent- age returned to duty
Concussion syndrome.....	55	0.98	Gas neurosis.....	2	0.50
Traumatic neurosis.....	106	.86	Neurasthenia.....	50	.44
Exhaustion neurosis.....	62	.82	Hypochondriasis.....	17	.35
Hysteria.....	297	.53	Anxiety neurosis.....	24	.16
Hypermotivity—state of anxiety (funk).....	135	.52	Psychasthenia.....	4	.0
Concussion neurosis.....	54	.50	Effort syndrome.....	5	.0
			Anticipation neurosis.....	7	.0

It is evident that the more clearly exogenous the precipitating factors the better were the prospects of return to front-line duty.

Concussion syndrome was a term applied to cases in which the concussion factor was the predominant one, but not so exclusive as in the concussion by explosion group. The distinction is not a sharp one and it had to be largely from the history of the case; it arose from a desire not to preface the undoubtedly pure concussion cases with the term "psychoneurosis" on the field medical card. The following case is illustrative of the concussion syndrome group:

Pvt. A. B., 4th Inf. Age 21; civilian occupation, coal miner. There was nothing abnormal in the patient's family or personal history or make-up. He enlisted in June, 1917, and came to France in April, 1918. He served with the 3d Division at Chateau Thierry and in the Argonne, and had no nervous symptoms. On October 22, after 21 days in the sector north of Verdun, he was returning to his company after taking some prisoners back. The shelling became hard and he took refuge near a bank. A shell was heard coming and that was the last he remembered until he pulled himself out of some dirt. He was dazed and had a headache and was nervous, reported to the first-aid station, and was sent to the rear. On October 25 he was admitted to the hospital as a walking case. He complained of headache. Physical and neurological examinations were negative. His attitude was good, and he returned to his outfit on November 4.

In the next group, the concussion neurosis, there was a history of a concussion experience, but it was much less definite and the outstanding feature was that the usual post-concussion complaints—headache, dizziness, general aching, tremor, and weakness—showed a tendency to become fixed and often to be elaborated. In other words, a neurosis had developed. The following is an illustrative case and it might well be termed hysteria:

Sgt. E. R., 1st Pioneer Inf. Age 23; civilian occupation, leather worker. The patient's father had diabetes. The personal history was negative. He was earning \$24 a week at the time of his enlistment in May, 1917. He came to France in July, 1918, and served in the Chateau Thierry and Verdun sectors. The first time under fire he "was nervous and shook up," and couldn't sleep, and was shaky that night. The other men laughed at him. This passed off after the first day. He was with his regiment in the Verdun sector from September 26, and was very nervous when the shells hit close. Finally, on October 22, he was near a shell explosion that blew up three of his men. He saw the shell explode and the men blown up, and he himself was thrown down and lost consciousness. He came to in a hospital and "felt dizzy and light-headed, had headache, and was shaky." Two days later (October 24) he was admitted to the neurological hospital. His complaints were: "I feel dizzy and have pain in the back of my head." Physical examination was negative. He seemed to be of questionable material and his headache and dizziness persisted. He was transferred to Base Hospital No. 117 on November 8, 1918.

There were 65 cases in which the history and examination left no doubt that shell concussion was the dominant factor: Concussion by explosion, 10; concussion syndrome, 55. As has been said, two of these cases were transferred because of surgical complications. All but one of the remaining 63 cases returned to front-line duty. Of the concussion neurosis cases—in which the concussion history was less clean-cut and the subsequent fixation symptoms were pronounced—only half the cases were returned to front-line duty. One can not avoid the conclusion that the more dominant and clean-cut the concussion factor, the more likelihood there was of the case being returned to duty. In this connection the individual make-up had to be taken into consideration. The genuine concussion cases were found, on the whole, to be individuals of superior stamina and attitude, compared with the others. Most of them would probably have carried on after a less clean-cut history of concussion, such as one obtained from the concussion neurosis. A shell is no discriminator of the individual make-up. The main thing is the individual's reaction to the situation.

One's estimation of the importance of the concussion factor had to be made largely from the history and the way it was told, and in most of the cases it offered no especial difficulty. When objective findings, such as unconsciousness and unsteadiness, were present, the diagnosis was greatly facilitated. There was one apparently comatose case that offered some doubt as to diagnosis—until he tried to bite the examiner. Usually the real cases had been carrying on well and there was a history of sudden loss of consciousness, with a rather hazy memory for the immediate concussion setting. As a rule the patient did not remember hearing the explosion clearly, but this condition was not invariable. It seems probable that the better the man's fiber the more tenacious he is of consciousness. It was striking, on the wards, how quickly these concussion cases began to improve and ask for activity and duty. This request was not observed particularly in any other type of case in the hospital.

Between the concussion neuroses and the hysterias the distinction is a sliding one. Undoubted cases of hysteria may be precipitated by a concussion experience, although it is usually a fairly safe one. The term hysteria was used in a rather restricted sense and included such symptoms as paralyses, anesthetics, aphonias, stammering, blindness, tremors, tics, gait disorders, amnesias, and fits.

A history of loss of consciousness was rather common in the hysterical cases, but on questioning it was evident that previous symptoms had shown themselves and that the way had been prepared for the final concussion experience. The stories of the explosion in these cases were vivid in detail, and consciousness was usually regained suddenly. In most of them the factor that determined the symptom picture could be elicited, i. e., being thrown on one hip, followed by paralysis of that leg; functional deafness following the sound of an explosion; and arm and shoulder tic developing after a rifle carried on that side had been struck by a piece of shrapnel, etc.

The following case of hysteria was interesting because a longitudinal section of the patient's experience in the American Expeditionary Forces was known, as well as the cross section condition that he presented on admission,

and which necessarily had to be the chief criterion in sizing up so many of the cases:

Sgt. L. F., P. W. E. Co. 89, First Army. Age 23. The family history was negative. The patient was graduated from high school at 16, and had been in the Regular Army since 1913. He went to France in June, 1917, and saw much service with the 1st Division. He gave a history of a slight wrist shrapnel wound in October, 1917, and some months later was gassed in the Toul sector. He was treated at Base Hospital No. 15 for this, and was discharged from the hospital in February, 1918. On June 10, 1918, he was blown up, with loss of consciousness, at Chateau Thierry, and was sent to a French hospital, where his chief complaints were headache and abdominal pain. He protested to a passing American officer that he was receiving no treatment from the French and was then transferred to an American hospital. The surgeon in charge decided that he had appendicitis and determined to operate. The patient refused operation and charges were preferred against him for this, and he was brought to Base Hospital No. 117 in this status. (This is largely the patient's own story.) At Base Hospital No. 117 his principal complaint was headache, and he was very solieitous in his attitude, and at times emotionally unstable. (One of his brothers in his own outfit had been killed shortly before.) The headache persisted unimproved for some weeks, and it was difficult to get the patient interested in occupation. It was learned that he was quite fond of horses, and so he was given some light duties in connection with the stables. Within a very short time his neurotic symptoms cleared up (there never was any evidence of organic disease), and he was discharged to class A duty July, 1918. While awaiting assignment at the replacement camp at Is-sur-Tille, a charge of dynamite exploded near him and he became shaky and upset, and when readmitted to Base Hospital No. 117 a few days later he presented coarse tremors of the arms and legs and a very marked stammer. These symptoms were cleared up easily with suggestion. It was felt that he would be unfit for any sort of line service, and so he was reclassified C-1 and sent to back-area duty in September, 1918. He was assigned to a prisoner-of-war escort company, and the next seen of him was on November 17, 1918, when he was admitted to the neurological hospital, presenting coarse tremors, a dodging head tie, and a bad stammer. In the rapid American advance during the week before the armistice was signed, his duties took him close to the retreating Germans, and on November 8 he was caught in a barrage, became shaky and weak, and the above symptoms developed. He "shook like a leaf, wanted to run, and didn't know what he was doing." He remained in a dugout for some days, until discovered by passing soldiers. Under the influence of the armistice and suggestion he cleared up rapidly, and was returned to duty a few days after his admission to the hospital.

The anticipation neuroses were cases which developed the various war neurotic symptoms before getting anywhere near the front line. They were essentially cases of hysteria, but less respectable, and very tenacious of their symptoms, and prone to relapse. They took few chances.

At the instance of the commanding officer of the hospital, the term traumatic neurosis was applied to a somewhat heterogeneous group. In these cases there was a history of a precipitating trauma, separated from the concussion neuroses, because there was no history of associated loss of consciousness. These cases also showed a much smaller tendency to symptom fixation than did the concussion neuroses, and the percentage returned to duty was relatively high (86 per cent). Most of them might be considered as hysteria of a better class. The following case is an example:

Pvt. H. K., 102d Inf. Age 24. Interior painter. His mother was "very nervous—subject to headache." The personal history was negative aside from some alcoholic excess. He was drafted in April, 1918, went to France in June, and was with the 26th Division in the St. Mihiel and Meuse-Argonne operations. On October 25 he was very nervous and shaky during a barrage, but he managed to carry on. On October 27, he said, a machine-gun bullet

went through his legging and that same day a shell exploded near him and he was knocked against a tree. He did not lose consciousness but "lost his nerve"; his comrades told him he was "crying and carrying on and shaking." His memory was rather vague at the time. He was admitted to the neurological hospital on October 29, complaining of pain in his back (lumbar region) and under his knees. He was also troubled with insomnia. His physical examination was negative and he appeared to be of fair stuff. His complaints cleared up rapidly, and he was returned to his outfit on November 4, 1918.

As has been stated above, cases of pure exhaustion were nearly all sent back to duty from their divisional hospitals. The exhaustion neuroses comprised the cases in which the fatigue symptoms became more fixed, and between this group and the neurasthenias the distinction was a relative one, depending on the intensity of the precipitating fatigue and on the consequent degree of fixation of the fatigue symptoms. The former was less marked and the latter was more marked in the neurasthenics. These cases usually gave histories of fatigue reaction in the line that was disproportionate and not acute; more than half of the neurasthenic cases were not returned to line duty because of their tendency to symptom-clinging. The following case is of the neurasthenic type:

Pvt. H. C., 102d Trench Mortar Battery. Age 25; occupation in civil life, assistant librarian. The patient's mother "has trouble with her heart and nerves and is very excitable." He himself had been subject to "palpitation of the heart" for several years. He enlisted in June, 1917, and went to France one year later. His first line experience was in the Verdun sector and he "was much frightened and nervous all the while in action. Shivered and couldn't stop." He "never could hike very well"—his "heart would beat fast." On October 15, after a hike, he "fainted away," and was very weak afterwards. On the following day he was sent to the field hospital, and on October 19 to the neurological hospital. "I don't feel strong at all and have headaches." There was no evidence of organic nervous or heart disease. His pulse rate would increase from 72 to 120 per minute after exercise. Mentally he was "not a strong character." His complaints of weakness persisted and he was transferred to Base Hospital No. 117 on November 8. He seemed to be quite a potential effort syndrome case, but his subjective symptoms were not fixed on his heart—as yet.

The rôle of fatigue in the vast majority of all admissions was an important one. Nearly all the cases came into the hospital in much the same condition in which they left the front line, and their common denominator was fatigue. It is quite probable that many neuroses developed because a patient's resistance was lowered by fatigue, just as sometimes a long argumentative speech is successful for the same reason and not because of any increase of potency in the argument. If fatigue, however, were the only factor, then there would be no disproportionate symptom fixation. One could frequently see just as tired-looking soldiers hiking with their divisions. Many of the cases of exhaustion were associated with the diarrhea that was so prevalent during the Meuse-Argonne operation. The following case is typical of the exhaustion type:

E. M., corpl., 101st Field Signal Btn. Age 21; electrician. The patient's family and personal history were negative. He enlisted in April, 1917, and went to France in June, 1918. He was with the 26th Division during the St. Mihiel and Argonne operations, and showed no undue reaction to shell fire. He had been under fire continuously for nine days previous to his admission to the hospital on October 31, and had had diarrhea for a week. Finally he "fell over and was helped back to the first-aid station." He had had little rest and limited food and heavy work and was "all in," and this was his main complaint on admission. Physically, aside from a slender build and tired-out appearance, he presented no anomaly. He made a quick recovery, and was returned to duty on November 4, 1918.

The gas neuroses were by no means the problem during the Meuse-Argonne operation that they were in certain of the earlier and less important operations. This was possibly due, in part at least, to the increased gas morale in the divisions, and perhaps also to the development of gas hospitals. But two of these cases were seen at this hospital. The gas-neurosis symptoms were to the lungs what effort syndrome was to the heart. Visits to gas hospitals by the senior consultant in neuropsychiatry and the corps consultants in neuropsychiatry were helpful means of providing gas medical officers with the psychiatric point of view toward these men.

There were but five cases of effort syndrome altogether among the thousand patients admitted. This low number was rather surprising at first because at Base Hospital No. 117, where the patients filtered from other hospitals, it was not unusual at times to find 5 cases of effort syndrome in a ward of 40 patients; all of which emphasized the rôle of hospitalization as a culture medium for effort syndrome. These cases required special treatment of graded activities and were evacuated with the recommendation that they be sent to our special convalescent camp for effort syndrome at Liffol Le Grand.

The hypochondriases, anxiety neuroses, and psychasthenias were of the same type as those seen in civilian life; they were persistent in character, and this was reflected in the low proportion returned to duty.

A final group was labeled "hyperemotivity" and "state of anxiety." In nearly all of these cases the funk element was predominant and the common attitude was "I can't stand the gaff." The term hyperemotivity was included in the field card diagnosis of these cases at the suggestion of the commanding officer of the hospital. This term was used in reference to the exaggerated jump and emotional reaction shown and occasionally such phenomena as tachycardia and increased sweating, and slight cyanosis of the extremities. There was no definite evidence of thyroid enlargement in any of these cases.*

The state of anxiety was a much more modified picture of anxiety than is seen in a typical anxiety neurosis where the cause of the condition is not so clear to the patient. In these fear cases the anxiety was with reference to the future, especially as it concerned return to front-line duty, for these individuals did not have the symptom alibi of an hysteric or neurasthenic.

The jumpiness to noises, while frequently seen in the other types of neuroses, especially the concussion neuroses and hysterias, was more prevalent in the fear group. Certainly it was much less marked in the true concussion cases. On the whole, there was considerably less of this jump reaction among the fresh war neuroses than among the older cases at Base Hospital No. 117. There was quite a tendency among many of the patients who showed it, not to try to control their jumpiness. It was regarded as demonstrable proof that they were genuinely "shell shocked," and the self-styled "shell-shock" cases fell mostly in this group.

* The number of enlarged thyroid glands among the war neuroses as a whole was insignificant. This was in contrast to one's experience with the British "shell-shock" cases, in which signs of thyroid enlargement were found sometimes in as high as 10 per cent. Most of the British soldiers had had repeated experiences in the line, while the Americans were relatively fresh. It suggests that thyroid enlargement may be secondary to the emotional reaction and not primary. It is possible, too, that the contrast was increased by the elimination of individuals with enlarged thyroid glands at the training camps in the United States. The facial expression of horror which was not infrequently seen in the British "shell-shock" cases, particularly those with repeated exposure, was seen in just one case at the neurological hospital. This patient proved to be hysterical and recovered within a week.

Many of these state-of-anxiety cases gave a story of concussion, but it was more than doubtful. Upsetting emotional experiences—companions killed, etc.—were common and probably very potent factors as the “last straw” in the development of the condition; sometimes such experiences were the “first straw.” Fifty-two per cent of this group were returned to front-line duty. The following case is typical:

C. S., private, 61st Infantry. Age 21; drug clerk. A maternal aunt was insane. The patient was “sickly” until 2 years of age, had enuresis until 8, and was regarded as a “nervous child.” He finished high school at 18. In July, 1918, he was in a quiet sector, but in September, 1918, during the St. Mihiel operation, he was under fire for two days and became “unnerved and fearful.” Beginning October 10, in the Verdun region, his sleep became poor, and he was bothered by battle dreams, horrible sights, etc. October 12 he lost his company (a not infrequent occurrence among these cases) and said he scarcely remembered what he was doing. He remembered, however, wandering about among the organization of the 30th and later the 7th Infantry. Toward night he saw a soldier stagger from the woods, and started to give him first aid when a shell exploded and cut the man in two. The patient dropped his gun and ran terrified until exhausted. He was picked up and sent to the neurological hospital on October 17, complaining mostly of “nervousness, poor sleep, and upsetting dreams.” His deep reflexes were increased, but there was no evidence of organic disease anywhere. He asked for work in the rear of the front line and said he could never stand shell fire again. There was some emotional instability; he wept easily; and he was terrified at the prospect of front-line service. He seemed to get a better grip on himself, and was returned to duty several weeks later. The armistice precluded a probable relapse.

ARMY NEUROLOGICAL HOSPITAL NO. 2, FIRST ARMY

Neurological Hospital No. 2, established at Toul, September 7, 1918, became a part of the Justice Hospital Group and occupied one of the series of buildings which had formerly been a French barrack.¹² The building was a four-story, stone structure with a capacity of approximately 800 beds. In addition to this building, there were available one small building, which had been employed previously by the French as an infirmary, with facilities for 40 patients, and two other small buildings. Of the latter, one contained three rooms, two of which were used as officers' quarters, and the third, a good-sized room, as a recreation room for officer patients; the other building, situated at the gate, contained seven small rooms which were used as quarters for the female nurses.

Since the buildings were not in fit condition to receive patients, it was necessary to employ a number of French women, who, with the nurses and enlisted personnel, proceeded to clean up the buildings. In less than a week's time and quite in time for the St. Mihiel operation, which began on the 12th of September, 600 beds were ready for patients.

The St. Mihiel operation lasted about four days, that is from September 12 to 16, and the number of war neurosis cases admitted was surprisingly small, owing to the character of the operation. The rapid retreat of the Germans, the comparatively small amount of exposure to high-explosive shells, and the brevity of the operation which eliminated in a large part the element of exhaustion, were the factors responsible for this small number of cases.

During the month of September, 325 cases were admitted to this hospital. Of this number, 44 per cent were returned to duty, 35 per cent were evacuated

to Base Hospital No. 117, 15 per cent were evacuated to Base Hospital No. 116, and 6 per cent to other hospitals.

During the month of October the number of cases admitted was 116, being an average admission of about 4 per day. Of this number 101 were returned to duty. The sources of admissions were other hospitals where the patients had remained various lengths of time. The average duration of the stay in the hospital for these patients was 21 days. This was due to the fact that many of the cases developed acute influenza and other conditions which required modifications of the treatment established for cases of war neuroses.

This hospital was abandoned on November 5, when part of the personnel was transferred to Neurological Hospital No. 1 of the Second Army and others returned to their proper stations.¹²

ARMY NEUROLOGICAL HOSPITAL NO. 3, FIRST ARMY

When preparations were being made for the Meuse-Argonne operation it was thought that the two neurological hospitals already organized would be insufficient to provide for cases which were expected to develop as the result of this operation. The hospital at Toul was too far removed from the seat of operation to be available. The hospital at Benoite Vaux could not receive men who were evacuated from the American front along the road leading south to the east of Souilly, or admit patients from divisions in the rest area along that road. The senior consultant in neuropsychiatry planned, therefore, to establish a third neurological hospital somewhere in the neighborhood of Souilly, where a group of evacuation hospitals was located. The hospital at Benoite Vaux was then about 15 miles behind the front line. It was the plan to establish Army Neurological Hospital No. 3 somewhere farther to the west and approximately the same distance from the front lines. Thus evacuation from the front could be made directly from field hospitals to Army neurological hospitals without first unloading patients at evacuation hospitals. The Army neurological hospitals were situated parallel to the evacuation hospitals and were within easy reach of the field hospitals by ambulance.

The site chosen for the third neurological hospital was Nubecourt.¹³ Army Neurological Hospital No. 3 was established in buildings which had been occupied by the French as a neurological unit. This was known as Ambulance S/V, during the French occupation of the Verdun section. The building consisted of a 12-room dwelling house, 2 barrack wards, and several outbuildings, making possible a total capacity of 220 patients. By the addition of tentage the hospital was further enlarged to a capacity of 400 patients. Army Neurological Hospital No. 3 was situated on the main road from Clermont-en-Argonne to Bar-le-Duc. It was also about 6 miles from Souilly, and thus connected with the road from Verdun to Bar-le-Duc. This unusually favorable situation of the hospital greatly facilitated the evacuation of soldiers from the front areas.

In accordance with verbal orders of the representative chief surgeon of the First Army, on September 22, 1918, this unit was placed in operation.¹³ Four medical officers were transferred to it from Neurological Hospital No. 1. Thirty enlisted men were transferred from Army Neurological Hospital No. 1; of this number 20, including two sergeants, were on temporary duty from Base Hospital

No. 117, while the remaining 10 belonged to Evacuation Hospital No. 10. Supplies were obtained from the advance medical dumps at Souilly.

This hospital, from the moment of its establishment, began to operate actively. As many as 242 cases were admitted during the first eight days of its existence, when the Meuse-Argonne operation began. Of this number, 229 came directly from field hospitals and were transferred by ambulance or trucks directly from the front. This number represented the personnel of 16 different units, of which 12 were divisions.

The memorandum which follows, sent September 30, 1918, by the senior consultant in neuropsychiatry to the chief surgeon of the First Army, is significant as indicating the value and success of this new type of hospital:¹⁴

The inclosed table shows the divisions from which patients have been admitted to Neurological Hospital No. 3 at Nubecourt up to noon to-day. It is seen that the 35th Division contributed nearly 60 per cent of all admissions. This is due to the fact that the division psychiatrist was not permitted to retain nervous cases in the divisional hospitals on account of the refusal of the divisional officer having charge of evacuations. The only other two divisions which showed a large number of admissions (37th and 91st) had accidents to their triages which somewhat upset the place.

The significance of this table is that 7 officers and more than 100 effective men were needlessly lost to their division at a time when every officer and man was of the utmost value. Nearly all the cases received at this hospital from the 35th Division were of the type which in other divisions are being returned directly to their command after a few days' rest and treatment.

No action is required in this matter on account of the cooperation which has been secured with the division surgeon. I am bringing it to your attention simply as an illustration of the advantage of the plan which you have approved. If all the divisions engaged had contributed an equal number of cases more than 1,000 men would have been lost within the last 5 days from this controllable cause of noneffectiveness. This is certainly important from a military point of view, but more important still is the bearing which the evacuation of such cases has upon morale and the prevalence of these disorders.

During the month of October the activities of this hospital were very great, owing to the character of the Meuse-Argonne operation, and it was necessary to increase its personnel in order to cope with its work.¹⁵ The report made by the commanding officer showed, on November 1, an increase in the personnel, consisting of 6 medical officers and 17 enlisted men.¹⁵ During the month of October, 868 patients were admitted to this hospital from 32 different organizations, of which 20 were divisions in the line. Of this number, including 242 patients who were held over from the last month's report, 561 were returned to duty and 307 were evacuated to the rear. Of those sent to the rear, 203 were sent to Base Hospital No. 117. The latter were cases that had not recovered during a period of two weeks and required further treatment and observation.

The total number of cases treated at this hospital from September 25 to November 19 was 1,169. Of this number, there were 852 cases which could be diagnosed as psychoneuroses. Of these 852 cases, 614 were discharged as recovered. Of the cases received at this hospital to which the diagnosis of psychoneurosis was made, which did not include the cases of exhaustion from exposure or from overexertion and influenzal conditions, the total percentage of cases returned to duty was 73.12 per cent, the length of stay in the hospital was 10.4 days.

The same psychotherapeutic principle which governed treatment in the divisions and at Neurological Hospitals Nos. 1 and 2 were employed. The methods by which they were put into effect at this hospital can be seen best by quoting from a report made by the commanding officer to the senior consultant in neuropsychiatry, as follows:¹⁶

As to the description of methods of treatment and management employed, the following may be said: The simplest form of therapeutics, consisting largely of hygienic measures, sufficed in the great majority of cases. These included such measures as food in an easily assimilable form, a hot bath, clean clothes, and absolute rest in bed for a period of from 24 to 72 hours after admission. In the cases exhibiting active motor symptoms, semisequestration, by such means as screening or use of single rooms for a period of one to four days, was found adequate for the removal of these phenomena. During this time of forced rest in bed the patients were not permitted to leave the inclosure, even for brief periods. No intercourse with other patients or with ward masters was allowed except as necessary in the routine of ward management. In no case was this unsuccessful. After a period of primary physical rest had been secured, the patient was provided with a clean outfit of clothing, including a properly fitting uniform. He then engaged in light forms of occupation (for a period of one or two days more), such as assisting in the sanitary care of the ward. At the end of this time he was sent for more advanced treatment into a workshop supplied with tools and materials for woodworking and such metals as tin, copper, brass, and iron. The capacity of the shop was 50 men. It was under military control, and activity in one or more of its departments was insisted upon. Constant supervision, instruction and aid being afforded by instructors. The ward surgeon designating certain patients for this form of therapeutics specified "whole" or "part-time" occupation for them. Each afternoon, weather permitting, the patients designated by the ward surgeon were assembled in military formation and conducted in charge of a commissioned officer on an easy march for a distance of from 3 to 6 kilometers.

Verbal orders for the discontinuance of the unit and the return to the supply stations of material were issued by the chief surgeon, First Field Army, American Expeditionary Forces, on November 19, 1918. The patients were disposed of and the material returned as ordered. The unit handed over to the French authorities the material which had been left by the French Ambulance 8/V when Neurological Hospital No. 3 was organized. The personnel was sent to Base Hospital No. 117 except for a section of 3 officers and 10 enlisted men, who were directed to report to Evacuation Hospital No. 6 for temporary duty in accordance with directions of the chief surgeon, First Field Army, American Expeditionary Forces, dated November 19, 1918.¹⁶

PSYCHOSES OBSERVED AT THE FRONT *

The following observations relative to psychoses seen at the front are pertinent:

There was observed in a small number of the cases admitted to the First Army neurological hospitals situated at the front, mental states analogous in their coloring to certain recognized psychoses, but which did not present the complete clinical picture or follow the same evolution of these diseases.

The statement is frequently seen in literature that war does not create any special type of psychoses. To a certain extent this is true. The cases of actual psychoses observed in psychiatric units in the Army fall into groups which

* Based on: Psychopathic Reactions to Combat Experiences in the American Army, by John H. W. Rhein, M. D. *American Journal of Insanity*, Baltimore, 1919, lxxvi, 71.

include manic-depressive psychosis, dementia præcox, paresis, epileptic insanity, and alcoholic psychoses. These are, in the main, conditions which are not peculiar to war.

But there are mental states which are seen in soldiers exposed to combat experiences, and who are admitted to the hospitals at the front, which may be considered directly related to war. These have already been described by French, Italian, and Russian observers. They occur in small numbers, only at the front; the symptoms are on the whole of short duration; they are directly related to the severe emotional and exhaustive front-line experiences; they show certain well-defined characteristics, and represent abnormal reactions in the sphere of the psychic, due to severe emotional experiences.

One of the forms of these mental states which were observed in a few cases was that described by Chavigny as aprosexia, or an inability to fix the attention. In this condition the soldier is unable to concentrate his attention upon the questions of the examiner, his eyes constantly move from the face of the medical officer to one or the other side, at times as if he saw some object of a frightful character, making no reply to questions and apparently oblivious to the presence of the examiner. These symptoms persist a few hours to a few days as a rule and finally disappear entirely.

A fairly common type observed was a state of mental confusion associated with what has been termed oneiric delirium, symptoms which were associated with a history of concussion and exhaustive experiences. These symptoms were at the same time susceptible of cure in a short time.

A third form which was observed consisted of a state of stupor associated with negativism and some catatonic phenomena suggestive of dementia præcox. In some cases the symptoms recall the paranoid variety of this disease. This type has been referred to by Davidenkof, who described states of hallucinatory mental confusion with pseudohebephrenic manifestations without the true picture of dementia præcox.

The following cases are interesting as illustrating some of these features:

A. B., private. Aged 31. In civil life a teacher by occupation. His father had suffered from a nervous collapse at the age of 47. The patient had been a stammerer and had suffered from three nervous breakdowns in 1900, in 1903, and in 1915. He enlisted in September, 1917, went to France in July, 1918, and had been in the post office of Dieulard since September 15, 1918, where he had been exposed to shell fire, though none burst nearer than 70 yards. The shelling had upset him and made it difficult for him to concentrate on his work. Two weeks prior to admission an agent for the *Stars and Stripes* gave him some candy which he later threw away because he believed there was poison on it. Again, a week later, a soldier borrowed his canteen and when he returned it the patient noticed a peculiar taste in the water when he drank from it, and he concluded that his companions were giving him some poison to make him erotic. On admission he complained of "being worn out," of a sense of tension on both sides of his head and the back of his neck, and a tingling in the arms and legs. He was apathetic, suspicious, uneasy in his manner, indifferent, and showed delusions of persecution. There were no hallucinations of sight or hearing. The symptoms improved somewhat during his stay in the army neurological hospital, but he was evacuated to the rear for further treatment.

This case represented a reaction which suggested the paranoid form of dementia præcox.

J. J., private. Aged 24. Was employed as a locksmith in civil life. He entered service in February and went to France in May, 1918. He was evacuated to the army neurological hospital from the Argonne front. On admission he refused to give any data regarding his family or previous history, nor would he discuss any of his war experiences. He was reticent, suspicious, and his answers to questions were so unsatisfactory that it was possible to obtain only a meager portion of the trend of his thoughts. He was evidently a victim of a conspiracy which had been formed for the purpose of blocking the workings of the Government. He had been in communication with Thomas Edison, but due to the spy system the work in this line had been interfered with. He said that everyone with whom he had come in contact had attempted to do him harm. Because of his persecutory trend he refused to discuss the details of his mental state, believing that the examiner was in league with the gang, who had persistently interfered with his ability to do good work for the United States Government. He was evacuated to the rear after three days' treatment, during which his symptoms had improved to a certain extent.

This case illustrated again a paranoid reaction suggestive of dementia præcox.

G. C., private. It was impossible to obtain the family or previous histories, or any information relative to the origin of his present condition. He was evacuated to the army neurological hospital from the Argonne front. He appeared to be constantly in a confused state, and refused to make any replies to questions put to him. He occasionally would mumble some words in Polish which were evidently of a religious character, assuming at the same time an attitude of prayer. He was rather emotional and would weep without provocation. He lay quietly on his bed showing no interest in his surroundings. Frequently his lips were observed to move as though praying. He was dull, stolid, and stupid in his manner, frequently put his head on the table and wept, occasionally nodded his head in reply to a question but would not talk. When asked why, he pointed to his larynx. He was evacuated to the rear in two days showing no change in his mental state. His condition was one of confusion associated with some negativism and depression.

J. K., corporal, aged 27. In civil life an oiler and coal breaker. The family history was negative. He had arrived at the 5th B grade and had never been sick in his life. He enlisted in April, 1917, and went to France, May, 1918. He went through the Aisne and St. Mihiel operations without mishap. On the Verdun sector he carried on under shell fire for three nights and two days. He then believed that his sergeant had induced him to maladjust his gun, which resulted in the death of three American soldiers. He looked upon the sergeant as either a German sympathizer or a German spy. He was somewhat confused but adhered to this statement over and over again. He complained of a heavy feeling in his head on admission and was unable to recall everything that had transpired previous to his admission. He was very much depressed, the depression centering around the death of his companions which he believed he had caused. The physical condition was negative outside of some stammering. At the end of three days he cleared up entirely.

L. M., private, aged 36. In civil life a railroad worker. The family and previous histories were negative. He enlisted April, 1918, went to France July 12, 1918, and was in the Toul and Verdun sectors. He was sent back from the Argonne front during the operation in October. He believed that he had gotten in bad in the camp from which he had come, and that several of the men were going to kill him. There was a plot going on in the ward also to kill him, and he heard the conspirators planning to make away with him before he went to sleep. He said he had come to the hospital because he did not want to "be shot like a dog. I want to go in some other outfit and get killed for my country." There was some concern and feeling about his situation, but on the whole he lacked insight. He was quite tense, did not understand why his enemies had it in for him, and feared he would be killed or court-martialled. He was evacuated to the rear in four days, somewhat improved.

The manic-depressive reaction was probably seen more frequently than any of the mental states under discussion. As a result of some intense emotional

trauma a soldier suddenly became wildly excited, associated with tremendous physical agitation and oneiric delirium, a condition suggesting mania.

These cases were seen in small numbers in field hospitals, where they required packs and hypodermic injections of morphine, the excitement subsiding in large part before they arrived at the army neurological hospital.

The following cases illustrate more particularly a mild manic reaction characterized by excitement, and associated with partial amnesic states:

R. D., sergeant, aged 27. In civil life an assistant sales manager. His father died of cancer, but otherwise the family history was negative. He was more or less disturbed by the sight of blood and the killing of animals, but in other respects his previous history was negative. He had spent two years in college. He was drafted in September, 1917, and went to France, May 31, 1918. He was with the British at Arras and then went to the Verdun sector on September 26, where he was obliged to do the work of his sergeant major, who had been killed. He was worried and disgusted by the lack of blankets, lack of artillery support, and the lack of ambulances at this time. Shells made him nervous previously and his nervousness continued to increase until finally a shell killed the adjutant, wounded another man, and threw dirt on himself. He became wild, crying and shaking in an uncontrollable manner, and was evacuated. On admission he presented evidences of fatigue, some tremor, and was physically restless. He recovered entirely and returned to duty at the end of two weeks.

L. B., private. In civil life a clerk. The family and previous histories were negative. He entered the service April 25, 1917, and went to France March 22, 1918. He had been under shell fire at St. Mihiel and gave a good account of himself during this operation. At the Argonne front he had been under shell fire a few days when he was blown over by a shell which killed two of his companions. He was dazed and lost complete control of himself, ran about in an aimless and excited manner, and was so violent and difficult to manage that the medical officer gave him a hypodermic of morphia. Upon admission he complained of tremulousness and nervousness and would start upon hearing sudden, unexpected sounds. He slept with difficulty and dreamed of war scenes. He also complained of a feeling of insufficiency, but otherwise the examination was negative. He returned to duty in three weeks.

A. H., aged 24, private. In civil life a contractor. The family history was negative, except that one sister was nervous and excitable. The patient had finished the first year at high school and presented a negative history, except that he was a bed wetter until 10 years of age, had always been easily frightened, and had suffered from nightmare. He enlisted May, 1917, went to France May, 1918, and to the front in June. Shell fire had always made him a little nervous, and he gave a history of very little rest and not much to eat. In October on the Verdun front a shell landed 25 feet from him. He began to "shake, pant, and sweat," felt chilled, "went wild," and ran around in an excited, confused state, and did not know what he was doing. On coming into the hospital he complained of weakness and headaches. He presented, on examination, a neurotic make-up, cleared up under rest, and returned to duty in a few days.

E. W., private, aged 27. In civil life a laborer in a steel mill. He attended school until 13 years of age, and was able to read and write. His mother was nervous and one sister had "falling spells." He himself had had nightmares and had walked in his sleep. He was drafted in September, 1917, and went to France May 30, 1918. He was in the Elbert sector in the trenches 10 days, went to Verdun September 26 and was blown over October 24. He stated "that the whole thing had practically demoralized him." He was in a shell hole when two shells struck near him. Shortly afterwards he remembered that he was running away greatly excited, yelling and crying. He went to the first-aid station and was evacuated. Upon admission he had recovered largely from his excitement and in a few days was practically well.

L. P., private, aged 23. In civil life a farmer. The family history was negative until June 3, 1917, when he was kicked in the thigh by a horse and was in a hospital for weeks,

since which time he was easily startled, fearful, and apprehensive. He entered the service April 1, 1918, and went to France June 27, 1918. He was sent to the Argonne front in October, where he encountered his first experiences under shell fire. He was there for eight hours and got along very well, being under heavy fire nearly all the time. He saw several of his officers and men killed and became more and more nervous, until finally was unable to carry on any further and was taken to a dressing station. Here he was very much excited, tremulous, and nervous, and "would become crazy when he heard the explosions." On admission to the neurological hospital he was excited and tremulous, started at unexpected sounds, and could not sleep. He improved greatly under treatment, but was sent to the base neurological hospital for further rest and treatment.

There is a small number of cases belonging to this group, on the other hand, in which the symptoms took a depressive coloring. Usually the picture was one of simple depression associated with preoccupation and sometimes with hallucinations and depressive delusions.

J. B., French Canadian, private, aged 31. In civil life a laborer. One brother, an alcoholic, died insane. The patient had an attack of some mental disorder of unknown character in 1911. He was drafted in June, 1918, went to France in September, 1918, and went at once to the Argonne front, where he passed through Clermont and Montfaucon. While helping to bring in food, he said, God's voice said to him, "Leave this place at once before something happens." He started to run and though he heard a sentry say "stop," the voice urged him on, and he ran in spite of the bullets from the sentry's gun, one of which gave him a flesh wound in the left arm. He stayed in the woods one night but was captured the next day, and ran away a second time, on the following day. On admission to the army neurological hospital he appeared to be a simple-minded French Canadian who was in a state of religious excitement in relation to delusions of persecutions and auditory hallucinations. He frequently repeated, "I don't feel quite right, I haven't done right, I didn't keep my promise to the priest to take 10 sacraments when I was sick last time." He believed he would not be pardoned. He improved considerably in a few days but he was sent to the rear, as it seemed advisable to give him a longer treatment than was practicable in the hospital at the front.

C. R., private, aged 25. In civil life a potter. One paternal uncle was insane. The patient had finished the fifth grade. He had always shown fear of the sight of blood and the dead. He confessed to have been depressed on numerous occasions in the past. He was drafted May 18, went to France July, 1918, and went to the Argonne front in October of the same year. Shells did not bother him until he saw many of the boys blown to pieces, when he began to get nervous. He was caught in a barrage and became very excited. Finally, at the end of two days a shell exploded near him. He was unable to tell what happened after that, but he believes he became unconscious. He reached a kitchen, but does not remember how he got there. On admission he was depressed, showed auditory and visual hallucinations, and was retarded in thought and action. He was emotional about his mother being home alone and could not understand why he did not get mail from her. His memories for events previous to the front-line experiences were good, but memories for the front-line experiences were hazy. He sat or lay in bed with his hands folded in his lap, silent, preoccupied, took no interest in his environment, and was somewhat disoriented. He improved considerably, but was evacuated to the rear for further treatment.

T. R., corporal. In civil life a carpenter's helper. Both father and mother died of tuberculosis. One brother was reported killed two days before he was admitted to the hospital. Otherwise the family history was negative. Outside of the fact that he was a bed wetter until 12 years of age and walked in his sleep, his previous history was negative. He enlisted in July, 1917, went to France in June, 1918, and went to the Alsace and Verdun sectors. He was very much exhausted by his first shell-fire experiences. He went to Verdun on October 8, and carried on well until October 10, when he heard of his brother's death from a friend, which upset him very much. He was in a trench when a German barrage was put over, some of the shells landing near him, none of which made him unconscious, however,

but he became flighty, nervous, and weak. On admission his expression was strained, his brows wrinkled and he was very much depressed. His depression centered largely around the death of his brother about which he was emotional. His insight was good and he was cooperative. He recovered in 10 days' time and returned to the front.

The front-line experiences which are practically similar as to exhaustion, commotional and emotional factors in all cases which show a reaction in the sphere of the nervous system, gave rise to a variety of reactions. These consisted in some cases of simple hyperemotivity which in itself incapacitated, in others it resulted in the occurrence of actual neuroses, and finally in a small number there occurred symptoms which presented a psychotic coloring.

The cause of this variety of reactions to identical experiences offers an extremely interesting field for speculation. Seemingly, it is due to the mental make-up of the individual. When the individual's balance is upset by certain conditions the reactions take one of a number of directions, the type of the reaction depending upon that particular quality of the mental make-up which predominates. We observe these reactions appearing in civil life in individuals who respond under stress more or less within normal limits. We see individuals who are considered normal, who under strain become depressed, excited or paranoid, conditions which may be looked upon as indicating the character of the mental make-up of the individual. These conditions may be regarded as mild transient psychotic states, peculiar to war, though the possibility of their occurrence in civil life, if the stress is sufficiently great, is not to be denied.

ARMY NEUROLOGICAL HOSPITAL, SECOND ARMY

The consultant in neuropsychiatry for the Second Army reported for duty with that army soon after its organization on October 10, 1918.^{17 18} Plans were immediately projected to organize a neuropsychiatric service for this army, which included the establishment of an army neurological hospital to provide for the cases of war neurosis which, it was anticipated, would arise as a result of a military operation scheduled to begin in the latter part of October. The army neurological hospital was organized and established, therefore, on November 5, 1918. It was located at Varvinay,¹⁷ an advanced position, within 3½ miles of Mobile Hospital No. 39 and near Field Hospital No. 117, which had been at Commercy, but had been moved in a day from this location to a site on the outskirts of Varvinay. Varvinay was about 7½ miles behind the front line and near the roads which connected St. Mihiel, Commercy, and Toul with the front areas. There were on this site, when it was taken over, three structures consisting of a small German barrack, a small French barrack, and a third building which had been partly destroyed by fire. The latter was at once repaired and was used for storing medical supplies. In addition to these buildings, two tents were erected on the level ground adjoining these buildings. Above this site, on a hill, were three large wooden structures which had been occupied by a French machine gun battalion, and three cottages. These buildings, before the St. Mihiel operation were occupied by the Germans. Two of the large structures were used to house the enlisted personnel, another served as a mess hall, while the cottages were for officers' billets. The hospital had an electric lighting system. On the hill was a spring which afforded an abundant supply of good water to all buildings occupied by the hospital.

The temporary personnel came from Field Hospital No. 117. This was augmented by men from Neurological Hospital No. 2, First Army, at Toul, upon the abandonment of the latter hospital, as recorded above. At this time two sergeants and six privates, Medical Department, attached for permanent duty to Neurological Hospital No. 2, First Army, were ordered to the neurological hospital of the Second Army for temporary duty.

Since military operations of the Second Army ended with the signing of the armistice on November 11, just a few days after they had begun,¹⁹ the activities of this hospital were likewise brief. The total number of admissions amounted to 12, and these were admitted on November 9. Of this number, 9 were returned to duty and 3 evacuated to the Base Hospital No. 117. All of these cases came from the 33d Division which was operating to the north of Varvinay.²⁰ The hospital was closed on November 23, 1918.

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- (15) Letter from the commanding officer of Neurological Hospital No. 3, to the senior consultant, neuropsychiatry, A. E. F., November 1, 1918. Subject: Résumé of operations of this unit. Copy on file, Historical Division, S. G. O.

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- (18) G. O. No. 175, G. H. Q., A. E. F., October 10, 1918.
- (19) Major operations of the American Expeditionary Forces in France, 1917-18, prepared in the Historical Section, the Army War College. On file, Historical Section, the Army War College.
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CHAPTER IV

HOSPITAL FOR WAR NEUROSES (BASE HOSPITAL NO. 117)

ORGANIZATION AND ADMINISTRATION

The most important base hospital in connection with the care of war neuroses in the American Expeditionary Forces was the special one, Base Hospital No. 117, at La Fanché. The plan for this hospital was outlined in the report of the neuropsychiatrist detailed to study the care and treatment of mental diseases and war neuroses in the British Army.^a As soon as the definite plans for this special base hospital, as outlined in this report, had been accepted by the War Department, efforts were begun at once in the United States to recruit and to organize the necessary personnel.¹ The director of the National Committee for Mental Hygiene made a careful search among the various State and private institutions for nervous diseases throughout the country, in the effort to obtain men and women whose training and experience qualified them for this branch of the service. The medical officers thus obtained were sent to special hospitals in the United States and England for intensive training in neuropsychiatry until such time as the hospital in France had begun to operate. The enlisted men and nurses were assigned to duty in neuropsychiatric wards in military hospitals in the United States until March, 1918, when the unit was mobilized.¹

Pending the arrival of this unit in France the senior consultant in neuropsychiatry made preparations there for the organization of this special hospital. The following memorandum was sent by him, February 9, 1918, to the chief surgeon, A. E. F. (the letter and inclosure which accompanied the memorandum are also given):²

1. If the attached recommendation for the establishment of a hospital at La Fanché for the treatment of war neuroses is approved, it is recommended that a cabled request be sent to the United States to transfer to that hospital, for duty, all medical officers, female nurses, and enlisted men, attached to Base Hospital No. 117, now on active duty in the United States and awaiting assignment to duty in France.

2. The commanding officer of that organization should be directed to bring all special hydrotherapeutic and electrical equipment in his possession, which is now ready for shipment. It is believed that all other equipment and supplies can be obtained from the medical supply depot here.

3. The medical personnel of Base Hospital No. 117 is made up of specially trained medical officers, female nurses, and enlisted men, and the number is much smaller than that of a military hospital of the same bed capacity, for the reason that patients will be employed extensively. The products of the shops can be used in other hospitals in France.

4. A copy of this memorandum, with inclosures, has been forwarded to the chief surgeon, L. O. C., through the chief surgeon, advance section, L. O. C., for his information.

^a This report is reproduced in full in the Appendix, p. 497, et seq.

OFFICE OF THE DIRECTOR, DIVISION OF PSYCHIATRY, A. E. F., A. P. O. 731,
February 10, 1918.

From: Maj. Thomas W. Salmon, director, division of psychiatry.

To: The chief surgeon, G. H. Q., A. E. F.

Subject: Use of Camp Hospital No. 4 for treatment of war neuroses.

1. It is recommended that Camp Hospital No. 4 be designated as "Base Hospital No. 117," to be used entirely for the treatment of functional nervous diseases and that it be staffed by the neurological section of the personnel of this hospital upon their arrival in France.

2. It is recommended that, pending the arrival of the permanent personnel, this hospital be used for the treatment of cases of functional nervous diseases now in various hospitals and for the observation of mental cases from the training area. A temporary personnel of experienced medical officers and noncommissioned officers can be provided from members of the American Expeditionary Forces already enrolled for work in this type of hospital. The buildings can be used temporarily as indicated in the attached table and diagram.

3. The functional nervous diseases (hysteria, neurasthenia, psychasthenia) and other conditions to which the term "shell shock" has been applied in the British Army are responsible, in the present war, for a large wastage of otherwise effective men. Three per cent of all casualties and 20 per cent of all discharges for disability from the British Army have resulted from these disorders. Although they are most frequent in soldiers exposed to shell fire, they are not uncommon among officers and men in training. A number of cases among officers and men are now under treatment in hospitals in the American Expeditionary Forces and 4.5 per cent of all officers and men already returned to the United States for discharge have been invalidated for these diseases.

4. These diseases are not only curable in the great majority of instances but their incidence among American troops will be determined very largely by the type of management employed. If they are regarded as incurable, except in special hospitals in the United States, and are all returned for treatment or discharge, several thousand more cases will result through the influence of this suggestion upon soldiers predisposed to these disorders than if they are efficiently treated and cured in France. In certain British "shell-shock" hospitals where the average period intervening between the onset of the disease and admission to a special hospital is about five months, less than 20 per cent are returned to duty of any kind. On the other hand, where these cases receive skilled attention in France, more than 60 per cent recover in an average period of treatment of only a few weeks. In the French neuropsychiatric centers established near the front, the percentage of recoveries is even larger.

5. These facts make it imperative for us to provide facilities for the treatment of this class of cases at the earliest possible date in order to check their incidence and to establish a sound method of management. Failure to do so is certain to open a serious source of wastage for the Army.

6. With this need in mind, a special hospital (Base Hospital No. 117) for the treatment of these cases and to serve as a clearing hospital for mental cases has been organized in the United States. This hospital has a very carefully selected personnel, nearly all of the medical officers having studied the war neuroses in special British military hospitals and all the female nurses and enlisted men having had experience with mental and nervous cases in civil institutions. Arrangements are being made for the attachment of the psychiatric section of this personnel to Base Hospital No. 8 upon their arrival in France, there to serve as a clearing hospital for the insane and mentally defective. This psychiatric section has a personnel of 7 medical officers, 6 female nurses, 7 noncommissioned officers, and 37 enlisted men. The remainder of the personnel constitutes the neurological section referred to in paragraph 2 of this letter.

7. Camp Hospital No. 4, at La Fauche, the location of which is indicated in the attached map, is particularly suited for the special purposes of a hospital for the treatment of the war neuroses for the following reasons:

(a) It is in the advance section of the line of communications, providing ready access from the front and insuring the absolutely essential impression among patients that their disability is temporary and curable and that they are not going into a long invalidism or necessarily en route to the United States.

(b) It is isolated from other hospitals and from military training camps but near enough to a hospital center (Bazoilles) to permit the ready transfer of organic cases and other patients admitted through errors of diagnosis.

(c) It is on the outskirts of a village of about 20 houses, large enough to provide billets for part of the personnel if needed in future expansions and small enough to be free from the undesirable features of a large town.

(d) It adjoins a small chateau with extensive gardens and a swimming pool, both essential in the occupation and physical training which constitutes an important feature in the treatment of these cases, and providing a separate hospital for officers when operating at full capacity.

(e) It is surrounded by level fields, providing the ample space needed for drills and exercises.

8. It is recommended that the village of La Fauche be placed out of bounds for any other military purpose to permit the most effective development of this special hospital.

9. It is recommended that the observation ward in Base Hospital No. 66 be discontinued as soon as this hospital is ready to receive patients.

THOMAS W. SALMON,
Major, M. R. C., U. S. A.

Arrangement of standard camp hospital for use as neuropsychiatric hospital (capacity with temporary personnel 80; with permanent personnel 300)

Use of buildings in standard camp hospital	Use of buildings in neuropsychiatric hospital
Administration.....	Same.
Officers' quarters.....	Same.
Clinic.....	Same.
Operating room, X ray, laboratory	Same (electrical treatment in operating room).
Patients' mess.....	Same.
Bath house and disinfecting.....	Same.
Mess, officers and enlisted men.....	Same.
Barraeks, enlisted men.....	Same.
Ward A (30 beds).....	Nurses' dormitory.
Ward C (30 beds).....	Ward for 15 acute cases requiring close supervision.
Ward E (30 beds).....	Shops and gymnasium.
Ward G (30 beds).....	Ward for 10 officers.
Ward I (30 beds).....	Ward for 25 acute cases.
Ward K (30 beds).....	Ward for 30 convalescent cases.

All the remaining buildings will be occupied when the arrival of the permanent personnel from the United States permits the hospital to be operated at full capacity.

The suggestions outlined in this correspondence were approved by the chief surgeon, A. E. F., and construction of the hospital was begun at once. It was ready for occupancy by the end of February, and since it was highly desirable to place it in use as soon as possible, recommendation was made to this effect, by the senior consultant, as indicated in the following letter from him to the chief surgeon, A. E. F.:³

1. In view of the desirability of receiving patients at Base Hospital No. 117 at the earliest possible moment, in order that soldiers with psychoneuroses now in other hospitals

may receive special treatment and the precedent of returning such cases to the United States may be avoided, it is recommended that this hospital be opened with a temporary personnel pending the arrival of the regular personnel from the United States.

2. It is recommended that Maj. George B. Campbell, M. R. C., who has been ordered to report at Neufchateau for duty in the division of psychiatry be assigned as commanding officer of this hospital upon his arrival.

3. It is also recommended that the following commissioned medical officers, noncommissioned officers, and enlisted men of the Medical Department be relieved from duty at the stations set opposite their names and ordered to report to Maj. Thomas W. Salmon, M. R. C., for duty at Base Hospital No. 117:

Capt. R. W. Hall, M. R. C.	Division of psychiatry, Neufchateau.
First Lieut. E. McConnelly, M. R. C.	Red Cross Military Hospital No. 1, Paris.
Sergt. Hugh J. Rice	Base Hospital No. 66, Neufchateau.
Pvt. Pearl I. Wiley	Do.
Pvt. Louis H. Tetu	Do.
Pvt. Richard O'Brien	Do.
Pvt. Curtis Senior	Do.

4. It is recommended that an experienced mess sergeant and 20 enlisted men of the Medical Department, one of whom is an experienced cook, be ordered to report for duty at this hospital.

5. The object of the above recommendations is to prepare the hospital so that patients may be received as soon as the necessary equipment arrives, to protect property, and to commence the cultivation of gardens and a farm, in order that this important feature of occupational therapy to be employed later may be successful.

6. It is recommended that all these orders be communicated by telegraph.

The following letter from the director of psychiatry to the chief surgeon, A. E. F., March 19, 1918, gives the main facts in the establishment of Base Hospital No. 117 and the early orders to transfer cases there: ⁴

1. Confirming our telephone conversation of to-day, Base Hospital No. 117 (Camp Hospital No. 4) is prepared to receive cases of functional nervous diseases, a small, temporary personnel being on duty.

2. A rough draft is inclosed for a letter to be sent by your office to commanding officers of base hospitals regarding the transfer of suitable cases.

3. As it is practicable to care for only 30 patients at the present time, it is suggested that this letter be sent now only to Base Hospitals Nos. 15, 18, 23, 36.

4. As soon as the personnel for this hospital arrives, which will probably be about the middle of April, patients can be received up to its full capacity of 350, including 50 officers. At that time similar letters should be sent to all division surgeons as well as to commanding officers of all base hospitals.

5. It is requested that this office be furnished a copy of the letter in the form in which it is sent out.

1. Base Hospital No. 117 at La Fauche, a special hospital for functional nervous diseases (hysteria, neurasthenia, and the conditions commonly termed "shell shock") is ready to receive patients by transfer from base hospitals. As the full personnel for this hospital has not yet arrived in France, only a limited number of cases can be admitted.

2. You are authorized to transfer to this hospital patients likely to profit by the special treatment provided. It is important not to send mental cases (including not only the insane and feeble minded but patients in whom these conditions are suspected), epileptics, or cases of organic nervous diseases. Patients in whom there is doubt as to whether a nervous disorder is functional or organic should be transferred to this hospital. Cases requiring surgical care should not be transferred.

3. It is desired to emphasize the fact that this hospital is not intended to serve as a step in the evacuation of nervous cases to home territory. It was established and will be operated by a specially trained personnel for active curative treatment with the object of restoring to full military duty as many cases as possible, especially acute neuroses developing at the front.

4. Until provisions for officers have been made only enlisted men can be received.

The early period of the hospital's service, from March 1 until the middle of June, 1918, is of minor interest. The total personnel consisted of 4 officers and 10 enlisted men.¹ Admissions during March totaled 6; during April, 25; and during May, 51. The Base Hospital No. 117 unit arrived in La Fauche, France, June 16, 1918, and then the history of the hospital as an organization really began.

When the American troops were sent to the front in great numbers early in the summer of 1918, the needs of the hospital greatly increased. In consequence, the hospital rapidly grew in capacity, finally having a total capacity of about 1,000 beds.¹ The necessity for facilities other than those afforded by the main group of buildings soon became apparent. The first addition to the hospital was a country house (the "officers' chateau") in a wood about a quarter of a mile away.¹ This was opened early in June as a ward for officer-patients who had recovered but who needed a short period of convalescence before return to duty. In this more restful milieu, away from the acute cases which filled the barracks-wards at the central group of buildings, these officers could get better hold of themselves and regain the composure and self-confidence which are so imperative for one again to assume responsibilities.

Some deserted French barracks across the meadows about one-half mile from the hospital were taken over early in August, 1918, and converted into a convalescent camp.¹ The capacity of this place was originally 125. Patients who had recovered from their symptoms were assigned there before being sent back to duty. Its routine consisted of daily calisthenics and drills. Any man whose symptoms developed again was returned to the hospital ward from which he came. The purpose of this place, like that of the "officers' chateau," was to give the men an opportunity to get hold of themselves and to fall back into military routine, before being returned to their organizations or assigned to duty elsewhere. The work was of such importance that at the time the armistice was signed the chief surgeon, A. E. F., had approved an increase in size to 1,000 beds. But the signing of the armistice put an end to further additions.

The patients were all discharged from this hospital by January 12, 1919, and the hospital ceased to function then. The personnel and records were transferred elsewhere, and the hospital was abandoned on January 31, 1919.

NURSING *

Previous to the arrival of the unit, June 16, 1918, there had been no female nurses on duty at Base Hospital No. 117. The arrival of the chief nurse and her staff was followed shortly by the organization of systematic daily routine on the wards. Careful and orderly case records were kept, and the direction of the wards took on the same qualities that would be found in the best neuropsychiatric hospitals in the United States.

In order to familiarize the nursing personnel with the special clinical and therapeutic features of war neuroses, the medical director of Base Hospital No. 117 arranged a series of lectures by members of his staff. It was his purpose

* The statements of fact appearing herein are based on a report of nursing at Base Hospital No. 117, made to the senior consultant in neuropsychiatry, A. E. F., by Chief Nurse Adele S. Poston, U. S. Army. Copy on file, Historical Division, S. G. O.

to make plain to these nurses, who were unfamiliar with war neuroses, the nature and types of these disorders. The lectures included information regarding the general conception, classification, and clinical aspects of the war neuroses. Emphasis was placed upon the more common methods of treating these cases and the part of the nurse in their care and equipment. Nurses fresh from hospital experience with civilian cases were unfamiliar with the war neuroses and this plan enabled them to get an understanding quickly of the point of view toward war neuroses which had been developed by the American Expeditionary Forces medical personnel.

The nursing done at Base Hospital No. 117 was not nursing as one usually conceives it. There were few cases requiring bedside care. Patients who entered in such a condition were usually up and about shortly. The first day or two of the patient's stay in the hospital were critical ones. It was important, above all, that he receive no false impression regarding the nature of his disability and that those erroneous ideas of it which he held be corrected as soon as possible. The ward surgeon, of course, began to treat him, but it was also very essential to have the nursing personnel alert to the problem of overcoming his difficulties. The primary requirement for good nursing and successful treatment was not merely the individual attitude of nurse to patient or ward surgeon to patient, but the social atmosphere of the ward was all important. An atmosphere of cure was necessary in order successfully to cope with the patient's mental attitude. It was essential that the patient realize that his condition was amenable to treatment and that recovery of sufficient degree to return to duty was the customary outcome of the hospital's therapy. Patients were never allowed to settle into a too comfortable situation at the hospital, but were always kept aware of their responsibilities as soldiers.

To maintain the "return-to-duty" attitude in each man on the ward was the primary nursing problem in caring for war neurotics. A severe ward routine was maintained. This consisted of regular hours for rising, military inspection by the commanding officer and staff each morning, prompt response to kitchen and other details, and other military assignments made by the medical officer of the ward. In some cases the details took the patients out as early as 4 a. m. Competition developed among the various wards, not only in the matter of decorations and good housekeeping, but in ward morale.

The daily nursing routine of the ward was roughly as follows: As soon as the patients were out of bed, dressed, and had been to mess, if ambulatory, they were assigned to some form of employment. The assignments consisted, as mentioned before, of duties on the wards or in some other department of the hospital, or assignment to the workshop (occupational therapy hut), an important therapeutic center. The kind of work done by the patients was determined, of course, by the ward surgeon's opinion of his condition. Work on the wards was directed by nurses and attendants and that in the shops by reconstruction aides. The more arduous physical tasks, such as road building, were overseen by enlisted personnel.

The ratio of nurses to patients during the day was 3 to 35 and at night 1 to 35. It was important not to over-nurse a neurosis case, but rather to encourage the patient to do everything he possibly could for himself. The

success of the nursing personnel, of course, depended upon the individual personality of the nurse. There was a great deal of difference between wards. So much depended upon the morale of the ward that it was not unusual for cases to be assigned to special wards because the staff felt that they could not "hold on to a tic or coarse tremor" on a certain ward, the general attitude of the patients on that ward being such as to discourage the presence of that type of hysterical symptoms. The type of nurse that accomplished most with war neurotics was one who was understanding, cheerful, impartial, and patient. It was necessary for her to strike a happy medium between severity and excessive sympathy. Elements of both kindness and firmness were necessary, but in the right proportions.

It has been said that the major problem in caring for war neuroses was the morale of the ward. This was, indeed, a difficult thing to manage. For on the one hand it was the duty of the nurse to be sympathetic and to listen to the patients' complaints and yet at the same time to counteract their worries and anxieties with firmness and decision. The nurse had to realize that any too sympathetic attitude on her part, any questioning of the successful outcome of treatment, was liable to render the patient unfit for further military duty.

Another duty of the nurse was her aid in giving the ward surgeon information of service in determining a diagnosis and military classification. Being with the patients on the wards so great a part of the day, the nurse had a better opportunity to study the patient than did the medical officer in charge of the ward. Indeed, the main problem, from the military standpoint, of these cases was their future army usefulness, and for the determination of this for the patients on her ward the nurse gave the ward surgeon his most valuable information.

OCCUPATIONAL THERAPY *

The importance of the occupational therapy that was carried on at the Base Hospital No. 117 at La Fauche lies in the fact that it was the first time that this form of treatment was put into effect in a military hospital under what must be considered forward-area conditions, as in the early days of June, 1918, this hospital was about 30 miles from the front line. The further significance of the workshop in this hospital is associated with the kinds of patients that were treated there. The character of the cases and the fact that an attempt was made to treat them with all the methods that were in vogue in the best-equipped hospital in the rear and in the home area formed the two striking features of the use of a form of therapy which up to that time had been reserved for hospitals at base ports or for those forming a part of hospital centers.

In describing the methods that were carried out there, it must not be forgotten that Base Hospital No. 117 had a particular problem to solve in a medical way and that the necessity for a proper solution of this problem was never permitted to escape the minds and interests of the medical and nursing staff or the reconstruction aides who managed the workshop.

* The statements of fact appearing herein are based on a report of occupational therapy at Base Hospital No. 117, A. E. F., by Chief Aide Meta Anderson. On file, Historical Division, S. G. O.

In Base Hospital No. 117 the use of work as a curative agency sprang, in the first place, from the necessities of the hospital in the early phase of its development. Before the regular staff had arrived and before the equipment had been brought over from the United States, when the hospital was simply an old field hospital with a few wards and a few medical officers, it received about 50 cases of what were afterwards called anticipation neurosis. These were soldiers who had never seen active service and had never been anywhere near the front lines but had developed neuroses either in America before sailing or en route to France. They presented a very unfavorable type of case, as may well be imagined. They were not war neuroses in the real sense of the term, never having been exposed to the traumata of warfare, but they presented symptomatically all the evidence of the most severe types of this condition. Treatment was extremely difficult because there was little either in make-up or temperament upon which to build. They represented as a whole the so-called neuropathic types of soldiers, the kind that were not at all adapted to the conditions of warfare. They would have been excluded from the Army if there had been in force the methods of elimination adopted later.

The hospital was much handicapped on account of the lack of roads and pathways between the rows of huts. It had been built on a field, and the wet and rainy winter had left it in a condition that prevented traffic of almost any kind reaching it. The first essential, then, was to build a road through the hospital connecting with the well-made French road leading from the highway to the village of La Fauche. Patients of all sorts were put to work breaking up stone and carrying it to make a foundation for a macadam road. The use of the stone-breaking hammer and the carting of the stones to the roadbed employed these patients for a number of weeks until the road was completed some time in May. The road was a model in its way and showed its value when the hospital grew to a capacity of 1,200 beds.

There were, of course, in this use of occupational therapy none of the refinements that were afterwards developed, and no attempt was made to emphasize the localization of therapeutic effort. It was occupational therapy in the broadest sense, and it had its effect on the patients simply because it gave them something to do and showed to those with paralysis and tremors that it was possible for them to carry out coordinated movements and to make use of their movements in the production of tangible results. From this very crude beginning the therapeutic workshop personnel, when they arrived for duty, found that the principle of work had already been established. The value to the individual patient was difficult to establish, as with this class little in the way of permanent improvement could be expected. Some of them did show rather good effects, and it was interesting to note that very few of them objected to this rather monotonous and tiresome form of work. The breaking of stone gives a good deal of opportunity to train coordination, and the use of a certain amount of skill is necessary in order to prevent injury to the hand holding the stone to be broken. The evidence of effort could be measured by the increasing pile of material, and the fact that this work was supplying a very practical need of which the finished portion of the road was the witness, formed the essential elements upon which the efficacy of any work scheme in treatment is based.

It accentuated further the fact that the type and kind of work are not of importance, nor is the output, either in quantity or quality. The things that count, however, are the physiological and psychological features that result from effort to overcome resistance. The crude and primitive employment of breaking into small fragments a bit of stone in order to build a road may be taken as an example upon which to base the principles of a work therapy on a more extensive scale. The very primitiveness of the instruments used and the use of the product suggest that something inherently deep down in man's make-up is touched in this performance. Road making is an ancient calling, and the soldier responded to this as he perhaps might not have to a more intricate task.

In its therapeutic effect, work is based upon very simple elements and these simple elements should always be thought of in planning its application to any individual. If the performance of breaking rock for the making of a road is examined, it will be found that certain necessary elements enter into it, and if a more intricate kind of work is studied, it, too, will be found to represent only modifications of these very primitive elements. If the problem of work therapy is studied as far as the neuroses are concerned, there appear certain requirements that must be met. These features are of two kinds: One is primarily mental or psychological; the other is physiological or mechanical. These features apply also to the two sorts of persons with war neuroses that benefit from work treatment. One needs it because there is some defect in coordination in a broad sense, and the other, because there is some psychological readjustment that demands attention. The exercise in coordination is found in the precision that is essential in using the hammer and in carrying out the necessary maneuvers in preparing and in handling the crude material. There is added to this an additional element that tends to produce precision of motion, and that is the danger of hurting the hand if the blow is not struck right. This makes for concentration and attention and brings into play the use of the eye at first to a great extent, and then develops an automaticity of movement that overcomes the excessive muscular activity that is associated with tremors and ataxic conditions. The development of strength, that is, muscular power, comes with the practice necessary to perform a definite task. There is, too, a certain amount of noise associated with breaking stones which was found to be a benefit to such cases as complained of being sensitive to sounds. This had to be overcome, and it was often found that the sound of the hammer against the stone was the best method of training this type of case to the usual hospital noises. The evidence of the productivity of effort could be measured by the pile of stone that grew up by each patient. The evidence of utility was the road itself, which the patient saw grow under his eyes. The psychological phase of this kind of work was found in the proof to the patient that a defect in muscular power must be only an evanescent one, if a muscle group that is not acting right is capable of carrying out effectively so complicated a type of movement as handling a hammer. The evidence of sufficient muscular strength was there to be seen. The conviction was forced upon the patient, therefore, that his defect was not only a temporary one, but that it was easily curable by the simplest of procedure—that is, use. The emotionally overloaded state that so many of these patients were in could be easily lightened by giving them a muscular outlet or rather an

effort outlet. Through their hands and fingers the emotional hypertension was sidetracked or exploded. In such routine work as this, automatic as it became afterwards in most instances, there was given to the patient an opportunity to face his own experiences, if he had any, or to face his present situation as it was interpreted to him by his medical officer. He could use his intelligence at the same time that he was carrying on his task.

This feature of this kind of employment therapy was used effectually in the material that came to the hospital later, when the more definite type of war neuroses, fresh from the combat area, arrived.

The emphasis on this simple type of work therapy is given because it underlies so much of the philosophy of reeducation and it opens the way for the proper appreciation of just what can be expected from treatment in the more exacting sorts of work that were afterwards used. What was lacking, of course, was the effect of the shop spirit as a whole, developed in a well organized shop, and the personal effect on the patient of skillful reconstruction aide or teacher. These elements can be supplied only by the presence of trained workers.

In the month of June the arrival of the complete staff at La Fauche and the increase in the number of available beds brought the hospital face to face with the duty it had been organized to carry out. Numbers of patients began to come, many of them showing the most severe symptoms of the war neuroses, and many of them comparatively fresh from the active fighting areas. The therapeutic problem was focused upon the cure of these patients as promptly as possible, and the return to active duty of as high a proportion of them as possible. From early in June until the end of the war nearly 3,000 cases of war neurosis passed through the hospital. A large proportion of these took part in some kind of work in the workshop as part of their treatment. It was possible to judge, therefore, with a fair approach to accuracy, just what this sort of work was able to do for them, and how necessary a part of the hospital for the neuroses is a workshop.

The base hospital unit contained a group of reconstruction aides who soon took over the task of running the workshop. Thus the occupational therapy became an established part of the routine treatment of Base Hospital No. 117, of which ward surgeons might avail themselves.

Owing to lack of room the workshop was set up at first in an unused part of a hut that had been a storeroom. A few tables were found, benches were made; and in a few hours patients had been assigned to the shop for treatment. Some weeks later a special Red Cross hut was furnished to the hospital and here the permanent quarters of the shop were established with increased equipment which was as satisfactory as could be expected in view of the difficulties in the way of transportation of such supplies.

The evolution in work therapy from that of stone breaking and road building to the craftsmanship that soon developed in the shop was a surprising and interesting thing. The shop, as a shop, began to have an influence on the patients in addition to the individual therapeutic effect of a specialized kind of work. It soon became a place where patients liked to be sent, and in its busy atmosphere the patients passed many hours during which they felt relief. During the whole period of the hospital's existence other types of work were

continued, not only as a therapeutic method, but because the hospital could not have functioned without them. The policing of the hospital in the military sense of the term, that is, cleaning up the wards, kitchens, roads, etc., was done by the patients; and the road was kept in repair by them. The chopping of wood and the cultivation of the farm land surrounding the hospital were always considered a part of the patient's duty. They were told that in so doing these things they were carrying out in a practical way the prescriptions of the physicians who were treating them. About 85 per cent of the total sick population of the hospital were always engaged in work of some kind, most of it being prescribed by ward surgeons.

The workshop was considered a sort of specialized therapy directed to a more definite end, planned to treat some definite symptom or to meet some special indication, while the other work was regarded as a kind of therapeutic background underlying the whole scheme of curative effort. The physiological and psychological needs were met by the use of muscular effort in the production of tangible articles. The handling of the tools and the various movements of sawing, nailing, screwing, and hammering, and the finer and more coordinated movements of wood carving, metal work of various kinds, weaving, and tinning, as well as much more delicate and more emotionally inspired technique of painting, sketching, and printing, supplied the essential training that the paralysis, tremors, and other symptoms needed. In a sense all of these defects were due to an intricate psychological process in which disassociation of function was a predominant mechanism. The patient could not properly innervate a muscle group because there was a defect in the proper utilization of that group. The result was often exaggerated movements in which the inhibitive control and the habituated minimum of effort were lacking. In the same way tremors were primarily defects in motor control, as were purposeless and ataxic movements of the choreiform types.

Motor reeducation, at first conscious and then automatically carried out, was required. The handling of tools awakened a dormant muscle control, shocked out of consciousness for the time being, and tended to restore the normal and habitual pathways long ago acquired. The familiar grip of a chisel, the friendly feel of a hammer or a saw, reestablished the proper integration and the proper tonal balance in antagonistic muscle groups. These, as symptoms, were acting without any psychological law or purpose. The product that was being worked at gave the necessary interest and permitted the proper concentration. The movements were allowed to fix themselves in the proper channels and the emotional block which stood in the way was for the time being lost sight of and the individual used his hands much in the way that was customary with him. The evidence that this was possible was before him, an evidence that no amount of persuasion or explanation alone could at times accomplish. It must not be forgotten that a large proportion of American soldiers had used tools and implements before in their civilian life, and the traditional pathways, so to speak, were present and only temporarily out of action as a result of their condition.

No effort was made to select the kind of work from any other point of view than that of the immediate requirement in muscle defect that was present.

The novelty of producing something that the patient had perchance never thought of doing himself lent an added interest to the carrying out of the job, but further than this no special effort was made to arouse any unusual interest in the thing itself. There was in this way a certain lack of rigidity in the shop that was one of its main features. Patients were sent there not to be amused or to pass the time away, but to be cured; often the therapy was directed to the local defect of the patient and the effort was planned for that symptom and for nothing else. To some of the patients the workshop was a place where they were exposed to a more invigorating influence than was present in the ward. This was particularly so in cases of depression and of apathy; and likewise in cases in which the prominent symptom was amnesia. In such cases the type of work and the product were of no importance whatever, nor was there a question of muscle training or education. Here the attempt was made to reassociate the separated bits of the patient's memory stream, and the stay in the shop was an extension of the effort of reassociation carried out in the medical treatment rooms by the several methods used in the hospital. The social element in the mingling with men and the doing of the bits of accustomed things, the talk and the noise of a shop, the familiar surroundings, all helped to that end. The automatic arousing of interest in the things that went on about him was an important element in the restoration of the patient to his normal condition.

The facing of the situation, a method which implies that the patient is told not to forget, but to remember past experiences and thus learn to compromise with them instead of dodging them, may be most successfully worked out if the patient is set to sketching or drawing the details of his experiences in the front lines, particularly those that preceded or accompanied the occasion when he was shocked or traumatized.

A number of such instances were found among the patients at Base Hospital No. 117, and the therapeutic result was very encouraging. These patients soon learned that it was the turning of their emotionally laden memories of terrifying experiences into pictures and sketches that gave them a definite feeling of relief, and that there was nothing in this kind of exercise that was at all in opposition to the work therapy. It was only a different way of arriving at the same result that was sought each day in their interviews with the medical officers who treated them. Of course, these drawings had a definite meaning and significance and they needed no interpretative mechanism to render them clear and distinct. As a contrast are the artistic productions of the insane which are often symbolically expressed and which act so often as a screen to the real meaning.

Whatever the psychical mechanism may be and whatever the place that emotion in relation to events may have, it is true that emotional states are relieved by muscular expression, if this expression is tangibly directed by the patient. In this truth lies undoubtedly one of the great therapeutic agencies in work.

The need of the articles which a shop could turn out was so great in the neuropsychiatric hospitals of the American Expeditionary Forces and the tendency on the part of those benefiting by these products to judge the value

of the shop by its production, made it difficult to always keep in mind the fact that the occupational work was a means of treating patients rather than a means of turning out a factory product. The trained occupational worker, however, was able to organize the work in such a manner that activities and tasks were assigned to patients for their therapeutic value alone. It was the duty of the workers in charge of the shop to apply the pressure for production in such a way that it would be a therapeutic agent.

It appears to be good evidence that the medical officers believed thoroughly in the efficacy of occupational therapy when they extended the experiment to a hospital in the forward area with all the conditions and limitations which that implies. Although the experiment lasted but two weeks, the medical director reported that because of the establishment of the workshop with its aid in the treatment of the men, he had been able to send back to duty some men who had been on the list to be sent to base hospitals for further treatment.

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CHAPTER V

WAR NEUROSES AS A MEDICO-MILITARY PROBLEM

War neuroses as a medico-military problem present three important aspects for consideration, each of which necessitates some special notice.

First, there is the military aspect of the problem. This concerns itself with the important fact that, in most instances, the soldier with a war neurosis is physically intact and very often in splendid physical condition. His symptoms of disease are disturbances due to an intricate physical mechanism of defense based primarily on the primitive instinct of self-preservation. He obviously can not be classified as mentally unfit; no more can he be regarded as physically disabled, yet he is incapable in this state of acting the part of a soldier. The fact that at times he has only a limited power of volition over his disability removes him from the class of malingerers. As many of these patients have been good soldiers, judgment as to their potential ability for further military life must be suspended. Where to place such an individual, and what to do with him, are questions that present themselves immediately. A soldier physically fit, mentally not affected, in every outward aspect a good fighting type, not a coward, often wanting to get back to the lines but held in the grip of a mechanism which negatives his soldierly impulses, presents a problem that again and again has mystified an officer who has at heart the best interests of the men under his command. Where the number of such cases increases to such an extent as to seriously threaten man power, then more than ever do the war neuroses assume the dignity of military importance. Therefore, no statement of the problem of the war neuroses can be made without considering from the very beginning its military significance. Many of the errors made in attempting to solve the problems of the war neuroses among soldiers might have been avoided if at all times the military point of view had been kept in mind. This point of view might be expressed as the effort toward returning such a patient to his former status as a soldier with the basic assumption that this is a thing possible to accomplish.

The second aspect is purely clinical. A traumatic incident or a series of them acting on the human organism, causes that organism to respond functionally by sets of abnormal reactions which, becoming fixed, stereotyped, and organized as symptoms, gives the picture of disease called war neurosis. Obviously, the thing to do is to classify these appearances into types, to designate them in some way, differentiate them from similar types seen in other conditions, and to devise some adequate means by which they can be treated and managed. The significant thing is that the war neuroses are essentially reactions to the varying incidents of war and that usually there is present a known set of etiologic factors. There is, further, a varying effect from the etiologic incident, and a therapeutic aim, which has as its chief incentive the return of the subject of war neurosis back to the conditions which, in the first instance, caused them to appear.

The third phase of the statement of the problem is the definition of mechanism. For it is necessary to know something of the processes which activate the clinical syndrome, as the surface symptoms are more a result of this deeper-lying, but not readily understood process. These must first be appreciated before anything really tangible can be done for the victims of war neurosis. Incidentally, it is this emphasis upon the underlying mechanism and not on symptomatic expressions, this apparent indifference, in fact, to specific symptomatology, which differentiates war neurosis from almost every other clinical problem.

MECHANISM AND CLINICAL EXPRESSIONS

The conception of war neurosis as a defensive mechanism or as a part of a system of physiologic or bodily conservation may be approached with less difficulty if it is made clear just what is implied by these terms. It is necessary, also, to appreciate the fact that the defense meant here is not conscious, but automatic and probably altogether outside of volition.

There exist in all living organisms, sets of factors which work toward saving them from destruction. There exists, likewise, in each important function of that organism, a mechanism for preventing the function from becoming excessive and for preventing injury to it as a whole or to its respective elements. Living would be impossible if this did not exist. The protection may be purely automatic and adjustable to mechanical factors, as, for instance, the hypertrophy of the heart. It may be chemical, as in the immunity defense. It may be various combinations and mixtures in which polyglandular activities come into play. It may be physiologic in respect to functional adjustments and physical when deeper and more intricate activities of consciousness are at work. The latter may be termed physiologic, but for convenience it is better to consider it a definite psychogenic mechanism.

This principle of organic defense appears to be fundamental, touching on the innermost principles of living things. Naturally this principle has long been recognized and, by whatever term it has been designated, it has been an admitted fact to be considered always in the attempts to understand the phenomena of life. When the mechanism of defense, whatever its nature is, becomes inactive or less efficient, the living organism may be said to approach destruction, or, if it fails completely, the organism dies. It is possible, perhaps, to divide the defense mechanism into two classes, one acting to prevent the mechanical using up of the living tissue—the wear and tear of the machinery of life—the other acting to resist and modify the exogenous factors of a destructive kind to which every living thing is ceaselessly exposed. It is obvious that, even if no sharp line of demarkation can be said to separate these two, yet the adjustability of the defense shows, in either instance, a difference in the quality of promptness and speed with which it can be put into action. The mechanically incited defensive organization is apt to be slow and cumbersome, taking place gradually according to the progress which the changed conditions of the mechanism itself necessitates, while the other must be capable of meeting quickly and decisively the immediacy of an oncoming event. Therefore, the latter type of defense must possess a certain power of selection or adaptability, because events or experiences are in their very nature dissimilar

and varied. This seems to be true of the neuroses in general, and of the war neuroses in particular. If they are studied from such point of view as this they show the characteristics of an exquisitely adjustable and often complicated piece of psychical machinery, adequately and, in a sense, personally fulfilling the purpose of protecting the individual against reexperiencing a series of destructive events to which he recently has been exposed. The analogy between the organically activated or sensitized probably goes no further than this, and the comparison has served its purpose if the fact has been made clear that the neuroses defensively considered are a part of a mechanism so fundamental for the preservation of life, as a physical phenomenon, that their existence can not well be doubted. There is nothing new in this conception. Freud long ago, and others before him, had seen in the neuroses something more than a collection of symptoms simulating organic diseases. Many students of the neuroses have been impressed with the apparent needless overemphasis of symptoms in face of slight degrees of possible determining factors, and they must have seen in this, or dimly felt at any rate, that some other incentive was at work than merely processes of reaction on the part of the organism. It was in this zone of overresponse that the explanation was to be found.

With the appearance, in the early nineties, of Freud's *Abwehr-Neurosen*, the conception of the neuroses as defense mechanisms began to make slow headway among the neurologists. To many of them the rest of the Freudian psychology was not convincing. That conception, however, was so helpful and clarifying that it gained the support and belief of many to whom anything else coming from that school would not have been acceptable.

The war neuroses have given the opportunity to test out this aspect of the Freudian psychology by furnishing thousands of cases in which a well known, and more or less constant, etiology was always to be found, and in which the resulting reactions might be studied, divorced completely from the cloud of etiologic sexual entanglements which so confuse the attempt to understand the peace neuroses.

With this conception of the neuroses in mind there remains to study them as they show themselves clinically in varied disease pictures, and to attempt to understand what these pictures mean and how they came about. The test of the accuracy of this conception is to be found in the light that it can throw on origins and mechanisms and the use that can be made of it in appreciating why the thing has happened. A further test will be shown if the facility by which symptoms can be treated and the patient restored to the condition he was in before is increased. The war neuroses show themselves clinically in a variety of confusing types. Classification seems almost impossible because the same symptoms are represented by types that are obviously distinct. In a group of a hundred acute cases, for example, there will be many symptomatic types, such as frank hysterics, anxiety groups, pure sensory disassociation forms, individual over-reactions, concussion forms, episodal and transient mental states.

Two ways are open in facing so complex a clinical demonstration. The first is to regard classification as of little consequence, but merely to find some few labels grossly descriptive of large groups and then to think of them as a whole and approach the therapeutic task by some mass form of treatment. The other way is to attempt a grouping, not based on clinical appearances alone, but on mechanism and the most immediate of the etiologic factors concerned. The former method has been adopted by most of the English and French neurologists. It has a certain advantage, chiefly in the avoidance of intimate study of individual types, and in supplying a ready means of avoiding difficult and controversial questions in regard to terminology. For example, it would be perfectly feasible to say that all war neuroses belong to one of two groups—neurasthenia or hysteria—implying that those showing primary fatigue elements belong to the former, those showing paralyses, sensory anomalies, convulsions, etc., to the latter. A third group might be made up of the concussion types. Some of the very best therapeutic results have been obtained by those to whom a further effort seemed useless. It should by no means be inferred because no effort is made to classify or carefully group cases, that the work is unworthy of praise.

It seemed, however, in our own experience, that in the long run the more minutely the cases were studied the more effective the therapeutic methods became. The first and essential step was to disintegrate the mass into groups. The smaller groups made easier an intensive study of mechanisms forming, by comparison with other groups, a standard of measurement. Furthermore, the various groups which sprang up almost automatically as a result of this tendency to analyze the material, became centers about which clustered specially developed therapeutic methods, prognostic experiences, disability classification questions and characteristic sets of mechanisms. All of this lent to their study a surprisingly increased amount of interest. A common differential diagnostic language grew up, at first limited to the staff at Base Hospital No. 117, which later spread to the forward areas and became, in a measure at any rate, the means by which neuropsychiatrists could communicate with others about their cases.

Therefore, the attempt to classify or group the war neuroses seems to be justified by the use which was made of the grouping and by the impulse it gave to a closer scrutiny of individual cases as they fitted themselves into this or that class. It must be understood that a grouping of this kind is of value only if it fulfils the test of utility. If it does not, it deserves to be given up without further argument. That it did seem to stand this test, at least in the experience of Base Hospital No. 117, is the reason for its description here.

The following groups were recognized as diagnostic entities at Base Hospital No. 117: 1, neurasthenia; 2, psychasthenia; 3, hypochondriasis; 4, hysteria; 5, anxiety neurosis; 6, anticipation neurosis; 7, effort syndrome; 8, exhaustion; 9, timorousness or state of anxiety; 10, concussion—(a) syndrome, (b) neurosis; 11, gas—(a) syndrome, (b) neurosis; 12, malingering.

In order that the mechanism of automatic defense may be set to work, the average soldier must undergo a series of events which tend to weaken what may be roughly and rather inexactlly termed his ordinary self-control. By

this is meant that he must be put temporarily in a condition where his normal mechanism of inhibition is seriously weakened. By inhibition in this sense is meant the totality of his power to control the natural exhibition of the phenomena of fear, terror, nervousness, horror, etc. To this must be added the positive factor which strengthens the inhibitory impulses—the military quality which keeps alive and ever present in consciousness the recently acquired traditions and customs of a soldier. This is an element of morale. The mental process by which this is accomplished is suppression or repression. Inhibition is merely a larger and more physiologic way of expressing it.

The important circumstances which tend to weaken this faculty are: Exhaustion; fatigue (the more chronic phase of exhaustion); and then, in succession, sleeplessness, lack of food or water, worry, responsibility, and incidents of a particular, horrifying or unaccustomed kind, loneliness, strangeness, ill-treatment, etc. The list of these incidents might be endlessly multiplied, but enough has been set down to indicate their character. The importance of incidents like those mentioned and others of a similar kind lies in the fact that they tend, each of them or in combination, to weaken the individual and to prepare the way for the reception of the final traumatic incident. They create in the soldier a favoring terrain; they further tend to develop in him a soil of receptivity, in which the neuroses, given the proper setting, can easily develop, become fixed and chronic. In opposition to these, the soldier, according to his peculiar personal make-up, struggles either forcibly or feebly, according to the measure to which he has surrendered himself to his career as a soldier. Back of all this lies, no doubt, many an emotionally-tinged impulse, leading straight back to his former nonmilitary existence. Among these may be mentioned the mass effect of discipline, or morale, the grip of idealism which led him to offer himself as a fighter, his experience with the Army as an antagonist, the memory of killed friends or comrades, his love for his officers, the honor and reputation of his regiment; all of them or some of them are present in the make-up of every soldier. They form the counterflow against the onrush of factors which center about the condition called fatigue or exhaustion. It is to be noted that in whatever stage of fatigue the soldier now happens to be, he is still in possession of consciousness and a knowledge of himself. In no way has he departed from the condition of a consciously controlled human being. No matter how feebly the inhibitory impulse is asserting itself, it is still to some degree active, and to that extent the soldier is aware of himself as a soldier, perfectly responsible and responsive to the demands of his position. It may be argued that in the extreme stages of fatigue, the condition of automatism may be reached, but even if this were so, its approach is too gradual to permit the neurosis structure instinctively fortified by the necessity of self-preservation, to take complete hold of him. At this stage there comes into play a very important and significant psychologic element in fatigue. This is a very unusual and possibly suddenly developed state of suggestibility. This extraordinary state of receptivity not only to outside things, but also to ideas, memories, and emotions of endogenous origin, form, perhaps, the most favoring circumstance for the development of the neurosis which at this moment is awaiting an opportunity to enmesh the individual in its defensive system.

From this point on two sets of things may happen. Both of them have a precipitating effect and both tend to act in a positive and dynamic fashion equally effective in the production of the first and necessary phase of a war neurosis. One set of incidents has to do, in a certain proportion of cases, with the purely mechanical results of a shell explosion in the immediate neighborhood of the soldier by which he is shocked to a greater or less degree, so that there is momentary loss of consciousness, or it may extend over some hours, as the case may be. As a rule, he either falls or is thrown to the ground, or wanders about in a confused way, and immediately enters into a state in which conscious inhibition is for the time being totally in abeyance. The other set of incidents has to do, not with a mechanically working factor, but with the appearance on the scene of some sudden, unusual or terrifying experience which, emotionally overloaded, tends to produce exactly the same condition.

The question of concussion, around which so much controversy has arisen, was not an important cause of dispute in the early years of the war. Even as late as 1917 and up to June, 1918, the most common etiologic factor in a case of war neurosis was that of shell explosion and the resulting concussion, but, as the fighting on the Western Front began to open up, the importance of this factor tended to lessen, though not enough to make it take a secondary place in the list of causative moments. In the earlier days of the war the explosive incident was often combined with a burial experience; that is, the soldier was not only thrown in the air but was covered with trench débris of all kinds, the two forming a twin traumatic incident which often had important consequences in the symptomatic sequence which followed. In the experience of the American Expeditionary Forces burial incidents were infrequent, a fact which decreased by so much the emotionally laden incident, which later became one of the most important of the fixation mechanisms.

The very constant reports in a soldier's history, as given by himself, of a shell explosion experience led the British Expeditionary Force medical service to inquire more exactly into its accuracy. For a time shell shock could be diagnosed only if there was documental evidence by witness of a shell explosion near enough to a soldier to produce a concussion effect. In some instances the soldier's recollection of what happened was not supported by the reports that came from the front. How large the error finally turned out to be is not known, but that the doubt was sufficiently important to warrant the effort of investigation is of importance here. No attempt, as far as is known, was made in the American Expeditionary Forces to obtain exact statistics on this subject, and all that can be relied on is the account given by the soldier as far as he could remember, and on the symptomatic sequence of events which he presented. These, as a rule, are unmistakable and can scarcely be imagined by the average soldier. Whatever may be the percentage of shell concussion experiences in cases of war neuroses, concussion still remains, in a large series of cases, the most important of the immediately working traumatic incidents. It was so important a factor that at one time concussion and its resultant neuroses became from a percentage point of view a very important, perhaps, all things considered, the most important group in the entire classification.

Whatever the immediate factor may be, a period of unconsciousness, confusion, or a dazed condition appears to be one of the most significant and almost necessary preliminary states favoring the development of a neurosis. Such a condition offers to the protective mechanism the opportunity to work, unaffected by the ordinary control of the touch with reality, which is implied when consciousness remains undisturbed. It is true that a neurosis can develop without an intermediary state, but in these instances the mechanism at work is of a much slower and more complicated kind, leading to approximately the identical condition through endogenous processes largely activated by emotional hyperreactions, breaking through consciously acting repression.

Considered as a process, and nothing else, evidently a state is reached by the soldier going into a neurosis when, for the time being, his conscious control is weakened or lost; at that period the instinctive reaction takes possession of him, and, uncontrolled by anything that he can at that moment interpose to counteract it, opens the way for the self-preservation instinct to obtain its fullest influence. At any rate, he remains under its control until one of two things happens: One leads back directly to the restoration of himself in his soldier capacity, in which instance no neurosis develops; the other, further and further away from his normal soldier self into something totally unlike and alien to the thing that he was, and then he begins to show one of the many types of the war neurosis.

In the course of this process another important element in the mechanism comes into play, especially during the period of transportation to a hospital and in the early days of the soldier's stay there. The process by which the initial symptoms become either temporarily fixed or tend to further elaboration has been described by various terms, none of them very satisfying. What happens is that there is given an opportunity for more complete concentration and introspection, so that the individual removed from contact with his accustomed environment and away from the external influences of military discipline, easily surrenders himself to his neurosis, which automatically tends to further elaboration and intensification of symptoms. If this is not counteracted by intensive medical intervention skillfully planned, and, above all, promptly put into effect, the war-neurosis subject falls under the complete sway of his neurosis and the picture becomes wholly that of a well-developed and chronic type. That there is more at work in this stage than pure automatism and unconscious impulses must be admitted. That there gradually develops a fairly active desire not to get well, but to remain in the apparently safe grip of the neurosis instead of facing a return to conditions which led to its production, seems also evident. There are seen here also the beginnings of another process, that is, a struggle between the innate desire to return as a soldier and the automatic persistence of the preservative tendency previously alluded to. Cases left untreated, neglected, or contemptuously handled rapidly develop into this state, and as a result form the most difficult subjects for subsequent treatment.

Before venturing to classify these cases, or rather to label them when grouped, it was necessary to redefine such terms as had been used before and to define the terms that were new. This implied in some instances a rather new, or at least a novel point of view, and a departure from some of the cherished

landmarks of our old neurology. Two factors necessarily influenced all the conceptions in classification. One was that the war neuroses were essentially war-born conditions, and that etiologic incidents were all colored by this fact. The other was the conception of the defensive or protective character of the neuroses frequently referred to in this chapter. A classification which implies a theory may seem artificial and dogmatic and applicable only to a limited series of differing conditions. This and other objections more vital might be advanced. For example, this classification is confusing because three things are considered in the grouping and given unequal prominence: Etiologic traumatic incidence; symptomatic expression; and what may appear at first sight to be an arbitrary selection of psychologic mechanisms.

It appears necessary to point out these defects for the reason that classifications are so often the objects of needless controversy and too much emphasis is often placed on them—an emphasis by no means justified in this instance when the modest origin of these attempts is considered. If this attempt at grouping, then, served the purpose of usefulness, it might take its place as a pragmatic constituent of the work done at Base Hospital No. 117.

There is a condition to which much that has been described above does not apply. It is mentioned here because it occurs very largely in the officer class, and may or may not have as an etiologic factor the acute traumatic incidents seen so frequently in the soldier types. The anxiety neurosis has a mechanism which is more complicated than the other neuroses and in which the defensive element is obscured by the presence of an intense and persistent conflict. This conflict has its origin in the necessity, which an officer at all times is conscious of, to conceal from the men under him and from himself too, every evidence of emotional stress he may be passing through. This he does by the use of repression. The repressed material of his experiences, notably those in which emotional loading is strongly present, activate the conflict between his desire to maintain and follow the tradition and training of an officer and the strongly entrenched but completely unacknowledged instinct to save himself. The essential difference between his reaction to the sequence of traumatizing events, just described, and that existing in the case of the soldier, lies chiefly in the fact that there is an ethical element at work which intensifies the conflict and causes him, in many instances, a great degree of mental distress, suffering, and self-accusation. This produces the state of anxiousness which is sometimes the chief and often the only evidence, externally at least, of his neurosis.

It is not to be inferred from this that only the officer class can be afflicted with this type of neurosis. Any soldier, especially one of some education or in whom there exists a well-developed ethical sense capable of introspective attention, may show this type of neurosis.

The anxiety type of neurosis presents a much more highly developed, pure, psychologic defense than the other forms. Its relation to physical factors is often much more difficult to demonstrate. In fact, it is often found developing after a rather long sequence of physically acting traumas showing markedly insidious progress and evidently originating from insignificant and not easily demonstrable beginnings. Its defensive character is chiefly in the fact that it renders the officer incapable of positive action, reducing him to a state

of neutrality. In this condition he becomes, one might almost say, the prisoner of his conflict and remains inert, without energy, without initiative, controlled almost wholly by the emotional stress engendered by the conflict going on within him. He is frequently unaware that such a conflict is present, the repressing mechanism working automatically to keep out of his waking consciousness all evidence of a thing of this sort. What he is aware of, and that very acutely, is his own mental distress and the physical expression of the emotional strain he is under. These external signs of fear, worry, etc., are dissociated in his own consciousness from the sources to which they owe their origin, and he is thus as much a puzzle and mystery to himself as he is often to the neurologist under whose care he may happen to be.

Several bits of qualification must be added to much of what has been written in this attempt to state the clinical problem of the neurosis from the point of view of its underlying mechanisms. It is necessary to appreciate the fact that in trying to trace the sequence of happenings which a soldier passes through on his way to a neurosis an average of such experiences was recorded, something that might be accepted as a plan of a physiologic experiment if the soldier could be made into a laboratory problem. There is no thought of making this entirely applicable to every case of war neuroses, or, in fact, is it certain that anyone ever passes through just the things that were described. Of all things in the world the war neurosis lends itself least to dogmatic statements, but what has been set down appears to be a reasonable explanation based on an analysis of many hundreds of cases.

The expression "his neurosis" has been used frequently in this chapter. The purpose of this was to hint at the very personal character of these defense systems, and any serious study of such cases will show the interesting fact that to each war neurosis subject the symptoms do become personalized, unique, and individual. Thus in attempting to describe them expressions having the touch of ownership appear to be warranted.

The clinical problem of war neuroses, then, may be summarized in some such way as this: There is a set of determining factors sensitizing the individual to one of or the set of direct causative incidents. These, as a whole, are capable of being set down in the order of their assumed importance. The immediately determining factor has a definite traumatic quality, either mechanical, as in the case of shell explosions, or emotionally directive, as in the case of unusual or terrifying experiences. A certain degree of initial disturbance of consciousness appears to be either necessary or a very favoring circumstance for the development of the neurosis structure itself. The disturbance may be anything from a slightly dazed condition, associated with some degree of confusion, to complete loss of consciousness lasting several hours. Associated with the disturbance of consciousness there develops some degree of automatism, or a stage in which conscious inhibition is so lost or weakened that the individual becomes a primitive organism reacting to the primitive processes of instincts. In this state the instinct of self-preservation asserts itself. Instead of instinctive flight or concealment taking place, a manifestly impossible condition in most instances, there develops the manifestation of various forms of the neuroses which replace them. These take such form as may be modified

by the peculiar circumstances in which the individual finds himself at that time and also according to his make-up. From the temporary fixation of symptoms the rest of the clinical manifestations of the neurosis tend to unroll themselves, influenced by the peculiar mechanism which was then set in action. The neurosis tends to elaborate, become fixed and stereotyped after the initial stage according to the individual experience of the soldier, his surroundings, the kind of hospital he may be in, the character of his medical treatment, the attitude of his nurses and doctors toward him, and other circumstances of a similar kind. At first the neurosis is entirely automatic, the product of a mechanism entirely out of the control of the individual. Later, there enters into the problem some measure of responsibility for the further maintenance of the neuroses. At this place in its development a cure must be effected, if the patient is to be restored to his former condition.

As was previously stated, the attempt to classify such cases as came to Base Hospital No. 117—and their number amounted to 3,000—was made for the purpose of so grouping them that more exact study would be possible, and that the mechanism underlying their production could be more effectively inquired into preparatory to a more direct method of treating them. It was apparent almost from the start that there were cases that seemed to correspond almost exactly to types met with in civilian neuroses and to these the terms commonly used there could be applied.

What appeared to be necessary, however, was a new definition to meet the conditions which the stress and strain of war implied so that the designation, war neuroses, might be justified.

NEURASTHENIA

There was a group of cases in which the chief evidence of disease was a manifest and intense condition of fatigue, the chief neurosis element of which was a marked subjective sensation of tiredness. Fatigue was an essential accompaniment of all muscular and mental effort, as it was of all special sense activities. In such cases it was possible to demonstrate the presence of a fatigue reaction, which can briefly be described as an overresponse to a minimal stimulus, or rather an overeffect to the resultant of a minimal stimulus. To such cases it seemed that the designation neurasthenia might be given. In this group, a very small one by the way, all the presenting symptoms were interpreted and analyzed as depending on the factor of fatigue, and this factor was amplified further by its subjective incidence. In other words, the primary experience was carried over into the neuroses as a fixed and powerfully acting preventive toward any moderate muscular or mental effort. The emotional background secondarily produced was that of a state of simple depression, with a concomitant fact of irritability.

The protective quality of a state such as this is clearly evident and needs no further emphasis. Such patients presented all the symptomatic evidences of a typical neurasthenic of civilian life, with this difference—they did not show the physical appearances so commonly met with in the usual neurasthenic types. When they did it was certain they were not war neuroses alone, but the development of war neuroses on conditions that had existed prior to enlistment.

Two types could then be recognized: (1) A neurasthenia differing in no important way from the neurasthenia of civil life, and (2) an acute, acquired neurasthenia—that is, a definite clinical variety of war neurosis. The distinction became the more obvious when it was noted that the acute cases presented few, if any, of the organic characteristics of the old neurasthenia, very few of the vasomotor disturbances, such as sleeplessness and cardiac irritability. Some of the extreme cases eventually did, but as a rule the evidence of neurasthenia was centered rather about the subjective sensation and its controlling power on the patient's activities than on the physical reaction due to disturbances of an internal kind.

What appeared to determine the presence of the neurasthenic type of war neurosis was the effect of a previous state of exhaustion, an acute experience which led to its further elaboration as a neurosis. That out of this could and did develop the typical neurasthenia was likewise true. Of all types of neuroses, perhaps the neurasthenia cases gave the poorest prognosis and resisted treatment most stubbornly. The absence of previous symptoms of neurasthenia in many of these cases, except the congenital type, led to the attempt to place them in a special class and very quickly they came to be recognized as characteristic but not common clinical pictures. Another part of this picture was the fact that there was nothing mysterious to the patient about his symptoms, their cause or their significance. No conflict of any kind seemed to develop. Its mechanism was automatic but wholly and completely conscious. A typical case follows:

A., L. J., Pvt., Co. L., 30th Inf. Born in Massachusetts; age, 20 years; race, white; date of admission, August 8, 1918; source, Base Hospital No. 13; occupation, worked in woolen mill, common laborer; alcohol, moderate. Family history: Mother dead—growth on neck; father, alcoholic, quick tempered. Schooling, first year high school. Always in good health; enlisted in August, 1917, at Syracuse until October, Camp Greene, N. C., until March, 1918; did well in camp. (Started to get dizzy when in a mill, gave it up and worked on farm, but it did not do any good.) Venereal disease denied.

History of present condition: Arrived in France, in April, 1918; to the front in May, 1918. Chateau Thierry, June 6; not under shell fire until July 14, and was able to carry on for about 11 days afterwards. Shells at first only made him a little nervous, but he kept constantly getting worse. Had been working pretty hard, and states had little to eat and drink. Finally while "digging in" amidst heavy barrage lost consciousness and remembers "coming to" in hospital about five hours later; here felt weak, dizzy, very shaky, and had pains in eyes.

Subjective symptoms: Condition on admission, heavy headache all the time; gets dizzy; sleeps well, eats well; "gets winded quick." "Not very strong." Not much energy—neurasthenic type?

Objective symptoms: Condition on admission, body clean; temperature and pulse rate normal; weight, normal, 144; present, 144. General condition—good; left ear not as good as right; three scars, pale, over left shoulder. Glandular system: Very slight enlargement of thyroid. Heart: No murmurs. Station good; tremors very slight.

Report of disability board, August 20, 1918: Disability did not exist prior to entry into service. Nature of duty recommended—duty in the line of communications.

Disposition: Duty, Class C-2, August 22, 1918.

Final diagnosis: Psychoneurosis, neurasthenia, L. O. D.

Condition on completion of case: Improved.

Postwar history: In 1919-20, he was working at his old job and was getting along very well. The work was done in a large airy room and he found it very agreeable. It was the same work he did before the war.

In August, 1924, he wrote: "Since I came home, the firm I worked before the service, they have promoted me to examiner on cloth, which was not my position before entering the service. I feel nervous at times, but not as much as when I returned. I think that probably my work does it as I am responsible for everything that goes through my hands. No diseases or operations since discharge, or before entering service. Weight 170 pounds when I returned home; after three months reduced to 120 pounds. Stopped work for a while and felt better; weight now is 165 pounds and feeling pretty good."

PSYCHASTHENIA

The second group of cases which early differentiated themselves were those in which doubt was a prominent symptom. In such instances there was little evidence of fatigue, or not at all after a short period of rest, or indeed, without it. Such patients were capable of considerable mental and physical effort, but they complained chiefly of doubt, hesitation, and an almost complete incapacity of choice. To this group, not a very large one, the term psychasthenia was given, chiefly because the symptoms corresponded accurately to the psychasthenic condition of civilian neuroses. Here two types began to show themselves; one, the typical psychasthenia of other days—the congenital scrupulous type, the exaggerator of small differences, the individual incapable of making decisions owing to the conflict of differences; fear as a consequence of choice preventing decision. The type is too well known to warrant any further description in this place. The other was an acquired state similar to this without a previous history of this kind.

If the condition of psychasthenia is reduced to its simplest expression, incapacity of the function of choice appears to be its primary departure from the normal. It is the fear of the consequence of choice through experience or through the anticipation of what the choice may bring about, that creates the static condition which is the chief characteristic of the psychasthenic's attitude toward events which tend to focus on him.

The term in Janet's sense seems to have too broad an application for the type which develops among the war neuroses. Here it is seen more as an evidence of the peculiar twist which the neurosis in its defensive adaptation causes. Perhaps, as is often the case, the type that the neurosis finally develops into depends on some congenital peculiarity of the individual or on some experiences in his past life, which are awakened and are set again into activity by the more recent emotionally-tinged traumatic incidents. An attempt to connect up the acute psychasthenic symptoms in war neuroses with events long past and forgotten with the purpose of proving this point was not successful.

A case history of a psychasthenic patient is the following:

D. E. R., Pvt., Co. D, 101 Ammunition Train, 26th Div. Born in Maine; age, 25; race, white; date of admission, April 6, 1918, transferred from Base Hospital No. 15; motor-man; alcohol, moderate. Family history: Father 45, living and well, moderately alcoholic; patient's grandmother 85, had some sort of nervous trouble; uncle, suicide by hanging at 55; father had one attack of nervous trouble at 35; good recovery; nature of trouble not known, not nervous now. Left school at 16—2 years in high school, good progress; five years motor-man at Lynn, Mass.; had rheumatism at 23, back and legs; pretty healthy; was struck by lightning (or rather schoolhouse was) at 12; scared of thunderstorm since; pretty even tempered; sociable; no especial fears. Was overcome with heat, July, 1917, just after being called out in Massachusetts; sick 2 weeks; no loss of consciousness. Always easily startled, especially after a hard stretch of work—"jumpy." Always dreamed scary dreams, mostly of fire.

History of present condition: Enlisted May, 1917; had heat prostration in July (see personal history); came to France October, 1917; well up to present illness and efficient; present illness, went up the line with the 26th Division the beginning of February and carried on normally till March 23 at Soissons; nerves all right till then. Town was shelled and shells were striking all around; one fell about 50 yards away; patient was not knocked down; he was scared and commenced to shake all over; after this, appetite and sleep poor; patient was jumpy and trembling and weak. He was accidentally hit on the head with a rifle about 10 days before and after this shelling his head ached on the hit (left) side of his head; headache better now; easily startled, any noise makes him jump; spontaneous, jumpy movements came on a day or so later, movements not localized. No change; has been at Base Hospital No. 15 three days; condition about the same. No work from March 23 (date of shelling) up to admission to Base Hospital No. 15.

Subjective symptoms: 1. "Jumping"—"any noise startles me and makes me jump." 2. Not much sleep (average 4 to 5 hours). Dreams much of bombardments (one recurring dream especially, being bombarded in a cellar, patient not hit). Difficulty is in getting to sleep and then wakes with a start. 3. Legs getting weak from lack of exercise. 4. Occasional headaches (chiefly left-sided). Cooperates well in examination, talks in rather quick jerky way. Jumps with small noises. No mood disturbance or outstanding anxiety features.

Objective symptoms: Big chap, 6 feet 2, weight 250 pounds at enlistment, 185 pounds now. Well developed and nourished. Mucous membranes fair color. He has several dime-sized skin infections on his face and some hair follicle pimples over his body. Special senses normal. There are frequent, usually several per minute, involuntary twitching movements, small excursion, more marked in neck and shoulder muscles, occasionally in face and legs. Bilateral and tielike. Glands not enlarged; throat clear. Heart not enlarged, sounds normal, pulse 76 regular. Lungs normal, genito-urinary system normal. Pupils active, no especial tremor. Deep reflexes hyperactive. No Babinski. Gait, station, sensation normal.

Diagnosis on transfer card: Psychoneurosis, psychasthenia.

Progress: April 11, patient is easily disturbed by whistling and chimes; get trembling and jerky; excited last night by excitement of another patient, made threats to "get the ward men." Calmed down and slept fairly. April 22, loud-mouthed and easily startled. Works fitfully, but gets a fair amount done. May 11, 1918, returned to labor duty, class C, to-day. On the whole, in practically same state as on admission. Works fairly and will be useful. May get a grip on himself later on, but it is doubtful. Doubtful stuff for the front in any case.

Report of disability board, May 10, 1918: Unfit for full duty because of psychoneurosis, psychasthenia. Disability did not exist prior to enlistment and did not originate in the line of duty. Nature of duty recommended: That he be placed in class C and used for general labor. Condition, unimproved.

On September 22, 1919, he wrote that he was not working at former employment. Unable to do anything at present. Feels "pretty rocky." Present condition poor. On July 24, 1924, he wrote that he was sick in bed and under a doctor's care and receiving compensation from the Government. He had not worked since his discharge.

HYPOCHONDRIASIS

The next group is the third of the consciously produced neuroses, and to this the term hypochondriasis was given because it so exactly fulfilled the condition on which such a diagnosis would have been made in neuroses in civil practice. This group was also a small one, having the smallest percentage of incidence of any of the groups. Indeed, it is questionable whether a pure hypochondriasis can develop *de novo* from war experiences alone. In almost all cases in which this diagnosis was made a previous history of this condition could be discovered. Hypochondriasis is perhaps the most perfect type of a

defensive neurosis because it touches a fundamental and primitive tendency found among all peoples; that is, the automatic release from duty, responsibility, and work in the presence of disability or sickness.

The mechanism consists of two intimately related things. First, there is evidently present in these patients an abnormally low level to receptive impressions from the external world; that is, the skin and special sense mechanisms are capable of transmitting a greater bulk and variety of sensory impressions and having them perceived as impressions, than is found among normal individuals. This lowering of the sensory level is also found in the receptive mechanism having to do with sensations arising from within the body, probably through the autonomic system. This intensification of the sensory margin has its chief effect in developing an increased capacity of attention—the hypochondriacal individual has not only a capacity to become aware of a flood of unusual and strange sensations arising externally and internally, but also has his capacity of attention sharpened to their perception when received. By that very sharpening of attention the facility of final interpretation of such sensations is increased. He thus becomes aware of a constant inrush of sensory impressions which tend more and more to occupy his field of consciousness. This mass of wrongly interpreted and wholly new and strange sensations is the crude material out of which the neurosis is fabricated. This fabrication takes on the picture of disease which becomes more and more definitely personalized as the process goes on. Naturally the experience with, or knowledge of, disease, together with the suggestions obtained from observation, rumor, and surroundings, influences the variety and dramatic quality of the particular disease in question. The collection of ideas concerning disease tends to occupy more and more the patient's field of active consciousness so that he lives practically controlled by them. When he responds to a constellation of this kind more than he can possibly do to the world about him, when his mental life spins eternally about this or that picture of disease, which at all times fills his field of consciousness, the complete picture of hypochondriasis may be said to have developed.

This completed picture should be sharply differentiated from what may be called a hypochondriacal attitude. This latter is very common among soldiers, but only as a temporary state which quickly disappears with rest and improvement. The true case of hypochondriasis shows no change under either condition and apparently is uninfluenced by treatment of any kind. It has been said that true hypochondriasis is rarely found as an acute or acquired type of the war neuroses. This is in a measure true, but it is quite possible for a clinical state closely resembling this to develop on the foundation of a slight and often insignificant or passing trauma or condition, insignificant in proportion to the more dramatic kinds of traumas so frequently mentioned in this chapter. For example, it was sometimes found that a soldier who had been operated on previously for appendicitis, under the influence of a series of traumatizing events, would develop a neurosis of this hypochondriacal type which appeared to center about the operation or the scar remaining as an evidence of it. Previous to such an experience the whole appendicitis incident had been completely forgotten, but suddenly there developed a complete picture of postoperative adhesions, pains, and a widespread area of scar tenderness. From such a

beginning the whole picture tended to spread, involving neighboring organs, until the patient was entirely in the grip of an ever-spreading collection of disease ideas. It is of some significance that in such cases the therapeutic outlook was more encouraging than in the type previously mentioned.

It is necessary to emphasize once more that the hypochondriacal tendency is often found entirely dissociated from the true neurosis, but even in its partly developed form, the essential mechanism as described could easily be demonstrated; that is, the increased capacity for automatic attention and the lowered threshold of sensory receptivity. In hypochondriasis, again, the neurosis is consciously determined and thus belongs to the group of which neurasthenia and psychasthenia are members. These three, then, form the first subdivision, the consciously originating neuroses. This does not at all imply that they are either wilfully or designedly produced, but that they play themselves out in the upper zones of consciousness and awareness.

A case history of this type is the following:

D., H., Pvt., Co. K, 109 Inf. Born, Pennsylvania; age, 25; race, white; date of admission, August 11, 1918; service, 4 months; team driver, shipyard. Alcohol, total abstainer. Family history: Mother died, cancer of breast; father living and well; 1 brother, stomach trouble, constipation; maternal aunt, nervous. Previous personal history: Indigestion (chronic constipation).

History of present condition: Inducted, March 10; France, April 2; front, July 15; left, July 16. "We were getting ready to make a counterattack. I asked for a drink of water, they handed me a canteen; as I made to get it I fell flat. We were in woods, shells flying pretty thick." One burst about 20 feet away, one hit apple tree and knocked patient down, and dirt flew all around; patient up all right as runner for captain. Another man tells of shell exploding right in back of him when he fainted away. This observer says patient was all blue and they thought him dead. Taken to regimental infirmary, then evacuation 6—to Base Hospital No. 30—here.

Subjective symptoms evacuation hospital: 1. Pains in head, also across back and in legs; 2, patient was shaky, legs and arms; 3, sleepless. Now: 1, stomach, gas, belching; constipation; 2, head; 3, can't lie on broad of back or left side because of smothering or punching of heart; 4, shortness of breath at night; 5, spells of vomiting; patient had stomach trouble previous to war—probably a severe case of concussion, delayed several hours before overcoming. C., of patient's platoon, says company hadn't eaten for 14 days, been under severe bombardment, patient asked for drink, shell landed 20 feet away, patient "keeled over," French Red Cross man fixed him up and C. took him to first-aid station, 100 yards away. Patient wouldn't let himself be carried, was in a pretty bad fix; "shell might have scared him; he just fainted."

Objective symptoms: Ambulatory. Weight, normal, 133; present, 128. General condition, good; skin and mucous membranes, healthy; blood pressure, 110. Heart: Loud systolic murmur over base.

Diagnosis: Hypochondriasis. Report of disability board, September 26, 1918: Disability did not exist prior to entry into service. L. O. D. Nature of duty recommended: Return to ordinary duty. Classification A. Condition: Improved.

On December 8, 1919, patient reported that since returning from France he had worked for two months but could not keep it up. Not working at present. Has pains in back and chest. Had not put any claim in for disability as yet. A letter received on July 31, 1924, indicated that this man had been receiving vocational training (\$100 a month) from December, 1921, and studying to be a stationary engineer. In January, 1921, he was operated upon for gastric ulcer at the Philadelphia Navy Yard. He said that he was not feeling very well.

HYSTERIA

By far the most striking of all the war neuroses, clinically, at any rate, is hysteria, as anxiety neurosis is the most subtle and intangible. These two are taken together, in so far as etiology and primary reaction are concerned, because both represent unconsciously produced neuroses, and both are types of a dissociation process. The one shows itself by dissociation of motor, sensory, special sense functions, and in some instances of the function of memory; the other, by purely psychological forms. The one—hysteria—showing no evidence of conflict; the other—anxiety neurosis—arising out of a conflict with a strong moral or ethical component. Hysteria was regarded as being in a sense a type of cortical dissociation, very often almost anatomic in its demonstration; the other has to do with much deeper and more illusive qualities of consciousness touching more closely on the factors concerned in personality. Another striking difference lies in the reaction to therapy. Hysteria was the most easily cured of all the neuroses, anxiety the most difficult. A curious and interesting point of difference was found in the fact that in hysteria there was little relation to pre-war conditions or experiences. In the anxiety neurosis analysis often led back directly to pre-war conflicts in which the same or similar elements could be demonstrated. They did not necessarily give rise to a neurosis then because the repressive mechanism sufficed to tide the patient over, but it was often easy to appreciate how definitely the stage was set, by virtue of the patient's former experience with conflict processes of less intense form.

Hysteria, then, is to be considered as a type of war neurosis caused by the mechanism of dissociation, by which functional activity in either its motor, sensory, or physical capacity is blocked from consciousness and conscious control. If an organ of special sense is involved the dissociation process tends to separate out one or more of its coordinating functions from the control of the complete mechanism. The part, or parts, in either instance divorced from consciousness can maintain itself in one of three ways. It can cease to act at all; it can act abnormally, that is, in a qualitative sense; or it can hyperact, that is, in a quantitative sense. In other words, there can be paralysis, uncoordinated or perverse forms of action or convulsivelike movement. This same thing is found naturally in the sensory and special sense fields. The dissociation process is most frequently set in activity by a somewhat sudden emotional or physical shock and, if in the latter instance, the precipitating factor is most often the effect of a shell explosion or some type of trauma associated with some degree of violence. The type of reaction in hysteria in respect to both localization and function bears a definite relation to the local effect of the trauma. Blindness is often the result of the acute blinding sensation of an explosion, deafness due to momentary loss of hearing. For the same reason, sensory disturbances are due to numbing of areas of skin following disturbance of atmospheric pressure in the zone of an exploding shell, etc. The emotional precipitating factors have the same curious localizing tendency, with the exception that here suggestion or imitation seem to show a more active influence. It is necessary to point out that in hysteria, particularly the acutely established types, is shown less clearly the characteristic protective defense than in some other types of neuroses, and it must be admitted that in some instances it is

only after the primary disturbance has manifested itself, whatever its nature may be, that the defensive mechanism is set to work and then chiefly in the direction of fixing it and making it more permanent.

A sudden shock having a positive degree of physical incidence may throw out of activity a certain function or a part of it, certainly too rapidly for any kind of physical mechanism to be set going. In such instances the instinctive action of self-preservation arises later, automatically making that loss of function fixed, thus establishing it as a neurosis of the war type.

Such a conception of hysteria is a departure from the usual thinking on this subject and naturally differs essentially from the theory of Babinski so much in vogue in the literature on war neuroses, but it seems impossible to escape from some notion of this sort, in the face of the almost instant appearance of symptoms after an explosion incident and the tendency to fixation and elaboration of the symptoms following the slow return of consciousness. Whatever rôle suggestion plays, it surely can be regarded as only part of a much more complicated mechanism and not the only factor at work. Among the most interesting phases of hysteria in its war neurosis coloring are the amnesias, which may be regarded as pure types of dissociation in the purely psychical sphere, and they obey apparently the same sequential rule as the cruder forms of response. The single and most reliable diagnostic evidence of hysteria is found in the presence of the dissociation process. When the symptom is capable of being described as due to that, and if it meets the necessary requirements of a hysterical symptom, not necessary to mention here, the diagnosis of one of the many forms of hysteria found in the war neuroses can be made.

Another characteristic of a hysterical symptom is that in its disappearance it may pass through any one or a combination of the three forms which have been described. Complete paralysis often recovering through the phases of tremors, exaggerated movements, etc., aphonia recovering through the phase of stammering, etc. The synthesis with consciousness very often is not direct and immediate, but indirect and incomplete. Two cases of this group are the following.

O. C., sgt. Co. F., 362 Inf. Born, Illinois; age, 25; race, white; date of admission, September 10, 1918; source Base Hospital No. 75; farmer; alcohol, moderate. Family history: Father died, Bright's. Mother, stomach trouble; 1 sister, nervous breakdown, 7 years ago. Influenza, 1917. Pyemia. Always nervous.

History of present condition: Drafted September, 1917. Overseas, July 5, 1918. Has never been to front. April, 1918, while in hospital for influenza had hysterical attacks occurring 3 to 4 a day for 3 to 4 days. No more attacks until rifle practice, after a few strenuous days again developed and then after coming to France during hand grenade practice a man in patient's platoon pulled the pin from grenade but became too excited to throw it and let it drop, he warned his men and they managed to get away unhurt. But he became much excited and that night after taps had an attack in which his whole body shook, was nervous and had queer numb sensations over body, profuse perspiration, was not unconscious, no tongue biting, no incontinence, did not fall.

Subjective symptoms: Complaints of pain around heart, trembling of entire body. (Soldiers call him "shakes".) Poor stuff. Hysteria. Class C.

Objective symptoms: Ambulatory. General condition, good; skin and mucous membranes, healthy.

Diagnosis: Psychoneurosis, hysteria. Report of disability board, October 4, 1918: Disability did not exist prior to entry into service. Disability is in line of duty. Nature of duty recommended: Labor in the line of communication.

Disposition: Class C-1.

Final diagnosis: Psychoneurosis, hysteria.

On December 13, 1919, he wrote that he had improved wonderfully in the last three weeks. Not working as yet, as he was discharged only a short time ago, but plans to do so in a short time. Is to be given a chance at his old work. Feeling quite well and has had a very good rest. Just came back from farm where he got back into shape. In the summer of 1924, he wrote that he was still nervous in time of excitement or exertion, but otherwise, normal except for "pains around the heart at times." He was working as an indexer of crankshafts and making 50 cents per hour. He received compensation of \$20 a month for eight months. This was cut to \$8 for three months.

B., F. E., corpl., Co. I, 102 Inf. Age, 19 years; race, white; born, Connecticut; date of admission, June 15, 1918; transferred from Base Hospital No. 1. Accountant; alcohol, moderate. Family history: Father, 42, gets tired very easily; very nervous temperament; excitable; two paternal aunts nervous; one has St. Vitus's dance; another was paralyzed in an arm and again in a leg—all cleared up. Previous personal history: Left school, 17; had two years at high school and two years at agricultural school; pneumonia, twice; grip, likely; last attack, 1916; followed by 3 weeks of pain in back, similar to present; no neuropathic history; variable mood.

History of present disease: Came to France October, 1917. Was not up in Soissons in February. Was in hospital with pains in right abdomen. (Old appendix, 1915, operation.) Went up to Toul with 26th Division, April 1. "Not at all nervous." Was on duty until April 21; all right except for diarrhea, which was getting worse (began in January). Was sent down from the line because of "exhaustion"—poor sleep; stomach upset because of diarrhea, and he couldn't eat. Says he was knocked down by a shell on the above date, but he kept on running; was paralyzed after; shakiness developed later in hospital; weakness was most striking thing; feels better now; pain in back came on in bed at Base Hospital No. 18.

Subjective symptoms: Present complaints—1, diarrhea, 1 to 5 times a day; some abdominal pain before stool; bowels loose; no blood; bowels apt to move at any time during day; 2, pain in back—comes and goes; 3, some pains around old appendix operation; 4, flat feet; sleeps all right; appetite all right; composed. Tells glibly how his abdominal adhesions were turned down by the S. C. D. Board. Says he wants to rejoin his outfit. Possible class A. Rather juvenile, bumptious type. "Will it be long before I can go back to duty?" (hopefully).

Objective symptoms: Body, clean; weight, normal, 165; present, normal. General condition: Well nourished and husky. Glandular system: Slight exophthalmos; positive von Graefe. Vascular system: Pulse 88, regular. Good looking appendix operation scar; nothing objective made out of abdomen. Nervous system: Coarse finger tremor not marked. Diagnosis—transfer card: 1, psychasthenia; 2, spondylitis, chronic, 8th and 9th dorsal vertebræ.

Diagnosis of ward surgeon: 1, psychoneurosis, hysteria, line of duty; 2, spondylitis, chronic, 8th and 9th dorsal vertebræ, existed prior to entry into service, not L. O. D.

Progress: July 3, 1918, apparently recovered, except a slight recurrent pain in back.

Disposition: Returned to duty, class A, July, 1918.

Final diagnosis: Psychoneurosis, hysteria, line of duty; 2, spondylitis chronic, 8th and 9th dorsal vertebræ, existed prior to entry into service, not in line of duty.

Condition on completion of case, cured.

On September 20, 1919, he stated that he was a cost accountant before enlisting. Expects to take position in same work. His health is excellent but exceptional loud noises, such as a band, a blast, a factory whistle, a passing train, or particularly a thunderstorm will set his nerves aquiver for periods ranging from five minutes to three hours. Is trying gradually to gain control of himself and thinks he will succeed.

On July 22, 1924, he wrote:

I am feeling fair only. I am very nervous but through power of will am able to keep it in check with the exception of organic trouble. For several months I have been troubled with stomach trouble and my physician lays the blame to nervousness wholly. Of the old troubles, my worst day of the year is the 4th of July and secondly those in which thunderstorms occur.

I am very strong physically, being 5 feet 7 inches in height and weighing 180 pounds, but this does not keep me from tiring easily. I can stand only a small amount of manual labor and my other labors must not be too monotonous if I am to work the whole day at the same job. Exercise in the form of games does not tire me and gives me the sleep which I would not get otherwise.

ANXIETY NEUROSIS

It is in anxiety neurosis that the most complete example of psychical dissociation is met with, that is, a dissociation unaccompanied by anatomically expressed loss of function. Anxiety neurosis has to do with a more general process and reaches down more deeply into personality than the more superficially located mechanism seen in hysteria. Something of the etiology and the primary reaction has already been touched on in the consideration of hysteria above. There remains to describe progress and final clinical results. The subject of an anxiety neurosis must be thought of as an individual in whom the repression faculty is well developed. This may come about as a personal characteristic, or it may be due to the position of authority given by his military status. Naturally the officer falls most easily into this class and it is in the officer class that the majority of instances of anxiety neurosis are found. Next would come certain types of the noncommissioned officers, chiefly such as have received their commissions recently, and then soldiers who by virtue of education and the development of higher standards are inclined to react easily to ethical considerations. While this may be the general type which develops this form of neurosis, there are always found exceptions which apparently do not fit into the conditions as set down. Such exceptions are probably insufficiently studied or understood.

In the typical case—for the purposes and necessary limits of this discussion only such can be considered—there is present, almost from the beginning, the essential elements of the mechanism of an anxiety neurosis. These are conflict, repression, not only of the memory of the experiences themselves, but also of the expression of the emotional reaction associated with them, and a certain degree of what may be called the ethical point of view in the presence of the antagonism between what is regarded as the right thing to do and the natural innate tendency toward self-preservation. These, of course, form only the basic groundwork of the process, indicating enough of the mechanism to warrant grouping these cases in a class by themselves.

In almost all instances an officer very early in his career, very likely even in the training camp, feels the necessity of repressing his dislike or objections to discipline, obedience, authority, and many of the other essential phases of military life. His repressive mechanism not only has to do with the ideas themselves, but also with the external evidence of his attitude toward them; that is, his conduct must depart in no way from the correct military form. For these, and indeed for most of the experiences associated with actual combat duty, the repressive function is amply sufficient to keep the officer from ever approaching the territory of the neuroses.

The repression faculty has a well-known tendency to become automatic and to act entirely without the intention of the individual. As the officer advances in his training as military life grips him more and more intensely, and as military discipline forms him into a silent part of the big army machine, he is less and less in need of any active manifestation on his part of this faculty or repression which was so much a part of the mental discipline of the earlier days of his training. It must not be forgotten that in the American Expeditionary Forces the professional class of officers was necessarily a small one and that most of the nonprofessional officers were taken out of civilian pursuits of various kinds in which no trace of military atmosphere, and certainly none of active combatant duty, were to be found. Therefore, there was no important set of military or officer traditions to which the future officer had long ago accustomed himself.

Therefore, it should be appreciated that in our Army the traditions of of conduct in general, and particularly those associated with active military life, had been very recently acquired, so recently that they were only superficially grafted on the officer's personality. There was need, then, to exercise, whether consciously or not, that form of inhibition called repression in order to maintain such traditions under circumstances of difficulty. This was especially necessary when the officer met front-line conditions, for the first time, when he had not only himself to keep in hand, but also the added responsibility of men under him for whose fortunes in the stress of trench or open warfare he held himself in a measure responsible. In addition to this he realized that the technical side of his profession, a most difficult and intricate thing, was also but recently and often most laboriously acquired and had now to withstand the actual and often bitter test of real combatant conditions. Notwithstanding these heavy burdens, very few officers, it must be acknowledged, even under the adverse conditions associated with front-line duty, developed neuroses. Those who did had to face peculiar sets of circumstances which tended to break down the inhibitory processes which held them together in their capacity as leaders of men. Under the strain of fatigue, exhaustion, worry, and some of the many incidents that have been before alluded to, and as a result of shell explosion with a concussion sequence, the faculty of conscious inhibition was temporarily lost and the officer acted for the time being as a primitive instinctive piece of human machinery and during the period of semi-automatism, confusion, or haze, the beginning of the neurosis of the anxiety type was laid. If some of these things did not happen in an acute manner, then a series of smaller and less important incidents brought the officer in exactly the same condition.

From this time on, the conflict began to assert itself, coupled with the dormant repressive tendencies, which again came into activity as the reality of the situation became more and more apparent. It is this antagonistic relation of conflict to repression that tends toward the separation of emotion from experience. This supplies the mechanism of dissociation alluded to before. There results then the clinical picture of a state of intense anxiety with the external evidences in the way of facial expression, depression, apathy, loss of sleep, dreams, and even the objective appearance of fear, tremor, rapid pulse, vasomotor reactions, in the face of the complete unawareness and lack of understanding on the part of the patient, of what really is at the basis of his discomfort.

The battle experiences repressed and in a sense partially forgotten, tend to express themselves by freeing their emotional content or by spinning themselves out in dramatic and terrifying dreams. There is present, then, the evidence of fear, and even terror, without being related to either actual experiences themselves or even to the actual memories of such experiences. In this state there develops a series of conflicts which must be regarded as being hardly conscious in some instances and wholly so in others. These seem to have been the more usual: (1) The conflict between the desire to go back to the front and the negative desire or wish for self-preservation. (2) The conflict arising between tradition and training of an officer and the desire to escape front line conditions. (3) The conflict between the desire to avoid the dangers and discomforts of the front, and previous ideas of duty, valor, etc., and family, social, personal, and class standards. (4) Conflict between the desire to escape and the feeling of inadequacy, in a military sense, of the responsibility of an officer in command of men. (5) Conflict between the impulse to go forward and the wish, expressed or not, to go back to former conditions in the United States. (6) Conflicts which had reference to events or similar types of conflict in pre-war experience.

Naturally there are many other kinds of conflicts, but these were so common in the cases seen in Base Hospital No. 117, that some of them were predicted in certain individuals and were actually found to be present.

Enough has been said of anxiety neurosis to indicate at least what is believed to be its fundamental mechanism, and to establish the fact that such a group of cases exists characterized by this mechanism. A case history illustrating this condition follows:

A. P., pvt., Co. 95, 6th U.S. M.C. Age, 19; race, white; service, 1 year; date of admission, July 11, 1918; source of admission, transfer Base Hospital No. 17; born, New York; mechanic; abstainer. Family history: Mother and sister had had "nervous breakdowns." No alcoholism; paternal uncle insane. Exanthemata. High school: Normal progress. Had headaches relieved by glasses; formerly somnambulist; afraid of thunderstorms until 14.

History of present disease: Enlisted June, 1917; France September, 1917. While in training camp did not like the instructors, but was not unhappy and not sorry he enlisted. After coming to France he liked it. Went into front line during March and April. Shelling did not bother him. Shelling was constant, "but it didn't amount to much because we had dugouts." During May was in rear. Became rather disgusted with excessive drilling; thought his outfit should have been given rest. Went into front lines at Chateau Thierry in June and welcomed the opportunity of getting some open warfare. For first four days he rather enjoyed it and although under shell fire and seeing a goodly number of casualties, he was not conscious of any fear, merely wondered whether one of the shells would "get him." June 5, his company advanced under fire to relieve French. He saw many French dead, with heads shot off and others staring at him. He was detailed to assist in burial. This disgusted and horrified him because he never could bear to touch a corpse. He then began to realize for the first time what shell fire was. For several nights he could not sleep because the dead Frenchmen would be constantly before him. At the same time shells began to terrify him. He began to tremble under fire but tried to conceal his fear and to carry on. His condition was exaggerated by the fact that his own artillery was not working very efficiently. June 14, while under heavy shelling in open, and after position of company had been changed several times, he began to tremble, became weak and had to go to dressing station. He quieted down as soon as he was in quiet hospital. For first few weeks had terrifying dreams. Dreams have been absent for weeks.

Subjective symptoms: Condition on admission—Says he feels fine now. Knows that he will not continue to feel so well if kept in hospital. Other patients make him nervous.

They shake and jump at every little noise. He says he was always unable to look at people who were shaking, or to listen to people who were stammering. Does not think that he is unusually susceptible just at present. Wants to go back to company.

Objective symptoms: Condition on admission—Good. Weight, normal, 150. General condition good. Diagnosis on transfer card: Anxiety neurosis. Diagnosis of ward surgeon: Anxiety neurosis (mild). Any duty in line of communication for at least two months.

Disposition: Class B-1.

Final diagnosis: Psychoneurosis, anxiety form, mild, L. O. D.

Condition: Improved.

On October 1, 1919, he stated he was not working at all at present. Upon discharge he started to drive a truck but could not continue to do so. He saw a doctor who ordered him to be quiet and do no work until he gave him permission. He says he is all right mentally.

On January 5, 1920, he wrote that he had received \$7.50 a month compensation, and that he was in the same condition he was in except rheumatism bothers him more and more.

In the summer of 1924 he wrote that he was a teacher of industrial subjects receiving \$2,200 for 10 months. He said:

I feel pretty good but can not stand any sudden and loud noises as on July 4. My breathing bothers me quite a bit.

The United States Government gave me a two-year teacher training course at Buffalo State Normal under the Veterans' Rehabilitation Board; also compensation at \$13.50 per month at present.

ANTICIPATION NEUROSES

The anticipation neuroses were so named because they represented reactions not to actual experiences in battle but to the anticipation of such experiences. The neuroses, therefore, acted not as protections against the repetition of events already lived through, but as protection against initially experiencing them. As a whole, they probably were patients who had shown symptoms of the neuroses in training camps at home, the manifestation of which had most completely developed. On the way over or after they reached the concentration camps in France, the symptoms became manifest again, and under the spur of immediacy rapidly took on the characteristics of a well-defined neurosis picture. The anticipation group was never a very large one and rapidly declined after active fighting began. Since they formed less than 10 per cent of the total material, evidently most of them were excluded by the neurological examinations made in the home training camps. Any of the clinical types of neurosis could be found in the anticipation group. This appeared to show that the memory of a past experience, imitation, suggestion, rumor—if emotionally intensified sufficiently—could arouse, in given instances, the defensive instincts to take the form of a neurosis, in the presence of a sufficient degree of receptivity and expectancy on the part of the individual.

The anticipation neuroses are not war neuroses in the narrow meaning of the term, but it was found necessary to include it in a classification and to place in it such cases as had never been at the front, as well as a few patients who developed the attitude of anticipation toward reexperiencing former experiences. They reacted similarly to the group for whom the anticipation neuroses were at first devised. The history of such a case, as fell automatically in the latter group, is as follows:

G., A. F., Pvt., Co. 2, Trench M. B. Born, Illinois; age, 23 years; race, white; date of admission, July 25, 1918; source, Base Hospital No. 6; drove mule in mine, \$3.19 per day; alcohol, moderate; finished fifth grade at 14; at 15 began working in mines and has continued ever since. Always healthy. Enlisted March 29, 1916, Jefferson Barracks; went to El Paso (15 months), then to Gettysburg, Pa., 7 months.

History of present condition: Came to France January 8, 1918. Went to the front March 12, 1918, Verdun, then to Chateau Thierry in May. Was never afraid when shells broke around him, but rather enjoyed them; had never been in hospital. On June 29, 1918, at 11.30 p. m., several shells burst near, and finally one burst and killed two men and wounded two others. Jumped up and started running toward woods and fell in ravine. Began to shake all over; knew everything that was going on around him, but couldn't control his nerves. From field hospital went to Base Hospital No. 6, July 3, 1918, until coming here.

Subjective symptoms: 1. "Nervous, shake all over, any little noise, can't stand it." 2. "Never afraid of anything, but now whenever anything drops I jump." 3. "Short of breath, sometimes I can't breathe." 4. "Can't sleep well, the least little noise wakes me up." Appetite good.

Objective symptoms: Body clean; weight, normal, 168, present, 158; general condition good; blood pressure, systolic 125, diastolic 95; heart tachycardia 94; abdomen, slight protrusion due to muscle weakness over each inguinal region; nervous system, quite marked general bodily tremors; pupils, regular, good reaction; knee jerks, slightly increased; osseous system, slight lateral curvature of spine to left about 10-12. Diagnosis on transfer card: Psychoneurosis of war.

Report of disability board, August 24, 1918: Nature of disability—psychoneurosis, anticipation neurosis; disability did not exist prior to enlistment in service; disability is in line of duty; classification B-2; condition, improved; nature of duty recommended, labor in the lines of communication.

On September 20, 1919, he wrote that he was back at home and at work as a salesman. He was feeling fine and doing well. On July 22, 1924, he wrote that he was working in a paper mill, salary 40 cents per hour. He was feeling fairly well, though a little nervous sometimes. He was receiving compensation at the rate of \$9 per month at the time of writing.

EFFORT SYNDROME

Very little will be said about the effort syndrome in this place. So much has been written about this condition and there is still so much controversy on the subject that nothing can be added toward clearing it up from the point of view of its place in a list of war neurosis types. It was common enough in the material at Base Hospital No. 117, and formed so distinct a picture that it was one of the most easily classified. From the point of view of its defensive quality it is a typical neurosis, associated with the exhaustion types, but has a more definite localizing quality. It frequently followed gas poisoning, being the most persistent perhaps of its after effects. Its close association with emotion and the emotional reactions of the cardiac and respiratory functions seems to justify its position among groups of a functional defense system. Clinically, it is too well known to describe here, and it is mentioned because, mechanistically considered, it ought to have a place in any classification of the neuroses. The following case illustrates this condition:

D. P., Pvt., Co. G, 104 Inf. Age, 26 years; race, white; born, Michigan; date of admission, July 27, 1918; source, Base Hospital No. 30; rubber-tire salesman and repairman; alcohol, moderate. Family history: Father, 50, neurosis-invalid type; rheumatism. Previous personal history: Left school at 14, seventh grade; at 8, in bed six months, infected, broken ribs below left axilla. "Heart trouble right along," always short of wind; easily startled; nervous with excitement.

History of present disease: Came to France October, 1917; up to the line February, 1918. Had hard times sometimes keeping up on account of shortness of breath. Carried on till July, 1918. Going over top, first time, dropped from exhaustion. As he arose a shell exploded near by and he remembers no more till he woke up at the dressing station. Shaky; blinded (not gassed). "My lungs have been weaker than they ever were." Feels a little better; not much.

Subjective symptoms: Present complaints—1. "Heart and lung trouble"—"nervous." "I seem to get all my breath on the right side. At night I have to jump out of bed sometimes to get my breath and on a hike I have to drop out to get my breath. Nervous; body shakes. When I am walking I get weak-kneed." Headache for two days; appetite fair; tastes sometimes after eating.

Ward surgeon's note: Rather hypochondriacal attitude and manner. Some grandstand rapid breathing. General tremor, moderate.

Objective symptoms: Condition on admission—body, clean; weight, normal, 158, general condition, fair; two scars of old rib operation in lower axilla-left. Pulse, 100; regular; variable rate. Too much muscle tenseness. Nervous system: General tremor, moderate. Deep reflex is difficult to get because of muscle rigidity. Diagnosis on transfer card: Psychoneurosis, hysteria. Diagnosis of ward surgeon: Psychoneurosis, effort syndrome. Progress: September 10—hard time breathing when doing strenuous work; difficult to take long breath; always been short-winded; pain in side and in heart; cough; head-shake tie; some stammer; appears quite neurotic; says always been some nervous; when in camp seemed like he couldn't last out in hikes. Gets upset in excitement. Does little detail work. Many hypochondriacal complaints. Pulse from 80 to 156; tremors of fingers; flushing of face; cough; respiration rapid. Probable Class C. Desires work in garage.

Report of disability board, October 9, 1918: Psychoneurosis, effort syndrome. Disability did not exist prior to entry into service. Classification, B-2. Nature of duty recommended: Labor in line of communication.

On September 29, 1919, he was in the U. S. P. H. S. Hospital, Waukesha, Wis., and not doing very well.

On July 28, 1924, he wrote that he was feeling fairly well and after receiving vocational training had obtained a satisfactory position.

EXHAUSTION

Exhaustion has its place in a classification of war neuroses because it connotes defense of a chemical or polyglandular kind. These patients came into the hospital in some numbers at first, but with the establishment of the forward-area hospitals fewer were seen. They represented a large percentage of the material seen in the triages and a considerable number of those seen in the advanced hospitals. In the earlier months of fighting they were often mistaken for and designated as war neuroses. As forming the foundation on which the neurasthenia type of war neurosis often developed, they deserve some mention here.

TIMOROUSNESS, OR STATE OF ANXIETY

Timorousness, or a state of anxiety, was a term given to a small group of individuals who frankly admitted that they were afraid to face conditions at the front, and deliberately gave way to this fear, refusing to accept or develop any compromise between themselves and what they had to do as soldiers. These are the true and only types of cowards. In them no repression of the kind mentioned here exists. This is not a neurosis, of course, as the whole mechanism is entirely too open and frank. At first sight such cases ought to be dealt with outside of a hospital, but in the case of a soldier the condition was so strange and departed so much from the usual conduct of a soldier that such an individual was not considered normal enough to be handled from the military side alone. They would belong probably in the same class as conscientious objectors, the difference being in respect to the kind of thing that interfered with their willingness to act the part of a soldier. The following is a case history of this condition:

B., W. C., Pvt., Co. B, 12th R. R. Engrs. Age 24 years; race, white; service, 1 year; born, Montana; date of admission, October 18, 1918; transferred from Neurological No. 1; railroad machinist; alcohol, moderate. Family history: Father and mother living and well; sister had epilepsy. Previous personal history: Went two years to high school; never was sick. Venereal, none.

History of present disease: Enlisted October 17, 1917; France, May 14, 1918; front July 17, 1918. July 18, on Chateau Thierry front was wounded by shrapnel in left thigh; was in hospital five or six weeks. Returned to front September 9; became nervous over shells and airplanes; could not work at his railroad work on account of shells making him nervous. Dropped tools or whatever he had in hand when explosion came. Asked for work farther back, as could not stand shells. Present complaint: Complaints of weakness and nervousness. Soreness in old wound in thigh; noise causes him to become nervous and to have headache; dreams some of shells and airplanes.

Impression: A man of fair intelligence, but of rather weak, neurotic tendencies; was wounded by shrapnel and when returned to front was afraid of noises; is able to do all kinds of railroad machine work. Recommended for work in railroad shops in S. O. S.—not combatant stuff.

Objective symptoms: Nervous; weakness; weak leg. Weight, normal, 114; present, 130. General condition, fair. Vascular system: Pulse 80; after slight exercise, 92; full and regular. Knee-jerks active; pupils react normally; coarse generalized tremors. Diagnosis of ward surgeon: Psychoneurosis, state of anxiety. Progress (later report): Very much improved; still has little tachycardia; says feels good but not as strong as formerly. Composed. Fearful of returning to shell fire. Sure he would go to pieces again. Complaints of cough sometimes at night; pulmonary examination negative. O. K. for duty Class A since armistice.

Report of disability board: Disability did not exist prior to entry into service. Return to duty, Class A.

Diagnosis: Psychoneurosis, state of anxiety, November 16, 1918.

On December 16, 1919, he was back at home and claimed to be bothered by a wound received July 18, 1918. Was working at old trade as machinist but could not do the work. Is doing much more inferior work.

On July 22, 1924, he wrote: "At present I am taking a degree course in mechanical engineering under Section No. 2 Training. Not nervous at present time. When I first got back I was somewhat nervous but I am not bothered with it at present or none within the last three and one-half years."

GAS AND CONCUSSIONS

Under gas and concussion were included cases in which the primary symptoms of a concussion or gas experience were elaborated into the structure of a neurosis by the mechanism of fixation and defense. In the concussion neurosis the headache, vertigo, amnesia, temporary blindness, instead of passing away in a few days, as they normally do, begin after a comparatively free interval, to become apparent again, with a definite degree of persistence and exaggeration which had all the characteristics of a definite neurosis. In the gas neuroses the hoarseness, difficulty in breathing, pain in swallowing or talking, pressure sensation in the chest, dyspnea, etc., show exactly the same tendency until there develops a chronic picture of gas poisoning long after the acute symptoms have any right to be present. In gas, too, the actual pain of a skin burn persists as a widely spread burning and parasthesia, long after the primary burn has healed and all trace of it has completely disappeared. The syndrome of these types is included here, because at times such patients were sent down to the hospital either through a mistake in diagnosis or on account of transportation necessities.

The following cases illustrate these conditions. The first two are gas syndrome and gas neurosis; the third and fourth, concussion syndrome and concussion neurosis:

A., O. E., Pvt., Co. A, 6th Engineers. Age, 41 years; race, white; born, Washington; source of admission, Cas. Off. Dept. Blois; carpenter; alcohol, very little. Family history: Negative, except that one son has a paralysis, subsequent to "grip." Previous history: Common-school education. No neurotic irregularities in make-up or history. No gunshot wounds or other casualties. Gassed, October 16, 1918. Venereal denied.

History of present disease: Enlisted, April 8, 1917. France, June 28, 1918. Front, Chateau Thierry, July 14, 1918. Carried on very well until gassed (Verdun) on October 16; mustard and chlorine, he was told; carried on anyway until sent out by his officer on October 21; in hospitals until sent to Blois, November 24. Sent from there here, December 3, 1918, for reclassification. No history suggestive of a neurosis; possibly an exhaustion with a rather persistent bronchitis following gassing. He had night sweats and loss of weight. Patient does not appear at all a neurotic type.

Subjective symptoms, condition on admission: Complains of cough and pain in front of chest and easy fatigability.

Impression: Some exhaustion, associated with chronic bronchitis following gassing.

Objective symptoms, condition on admission: Ambulatory. Weight, normal, 156; present, about 140. General condition: Rather tall and spare; looks a little emaciated, but has a good color. Skin and mucous membranes, as above; also a little tendency to hyperidrosis. Vascular system: Radials a little thickened; rate, 100. Blood pressure: Subnormal by palpation. Lungs: Right upper chest in back rather duller and percussion and breath sounds less clear than right; but no persistent râles. Pupils: Left a little irregular, larger than right, but both react normally. Deep reflexes all increased, equally on the two sides. Right face a little weaker than left. Otherwise regular.

Disability board, December 9, 1918. Diagnosis: Gas neurosis. Disability did not exist prior to entry into service. Nature of duty recommended, return to United States.

January 6, 1920, he was getting along pretty well, although he had a hard time of it at first. Is doing well at present.

On July 25, 1924, he reported that he was in vocational training studying to be a shoe repair man. He had worked as a carpenter for about one year, but had suffered from tuberculosis. He had been sent to Arizona, where he was at Whipple Barracks, Prescott. At the present time he is feeling well, though occasionally suffering from nervous troubles.

S., J. C., Pvt., 1st Cl. Co. 2, M. P. Born, Pennsylvania; age, 20 years; race, white; date of admission, October 2, 1918; source, Neurological Hospital No. 1; millwright helper; alcohol, very moderate. Family history: Father, 56, alive and well (except for rheumatism); mother, 48, alive and well, one sister and two brothers, alive and well; one brother nervous; left school at 16—8th grade; always healthy, usual diseases of childhood; "had spasms until 6 years old." Well ever since; rheumatism two years ago; never nervous.

History of present case: Enlisted April, 1917. France, May, 1918; went to front July 14, Chateau Thierry. Under heavy shell fire for about three days, becoming more and more nervous. A shell broke about 12 feet away, and he remembers nothing until waking up in a field hospital. Says other men told him he was gassed with chlorine and a little mustard gas. Very nervous and shaky; went to various base hospitals and finally put on M. P. duty at Nixville. Sent to Verdun front. Didn't mind the barrage, but couldn't stand the shells bursting near him. Stayed two days; got more and more nervous and fell down. Awoke in Neurological Hospital No. 1 and hence here. Dreams continually of battle, hears the whizzing of the shells, but "they never light." Sleeps very poorly. Says he is all right here, but couldn't stand the shells at the front.

Subjective symptoms: Insomnia—battle dreams. Very good material, somewhat nervous in make-up. Talks freely and frankly of condition and doesn't think he will be able to stand shells again. Probably Class B-2.

Objective symptoms: Good—rather nervous. General condition: Good. Glandular system: Small maxillary gland palpable. Vascular system: Impalpable. Heart: Normal in size and position; no murmur heard. Lungs: Nothing of note.

Diagnosis: Psychoneurosis, gas syndrome. Report of disability board, October 23, 1918: Disability did not exist prior to entry into service. Disability is in line of duty. Nature of duty recommended: Labor in the line of communications.

Disposition: Class B-1. October 29, 1918.

Final diagnosis: Psychoneurosis, gas syndrome.

On August 8, 1919, he wrote that he was doing different work from his pre-war occupation; working in a steel factory. It is too hot there for him, as he works with hot steel. Gets a pain over his heart every day at work and feels as if he would fall over any minute. On July 18, 1924, he wrote that he was earning \$175 a month as a bottom maker—had received no compensation from the Government and was feeling fine.

A., A., Pvt., Co. L, 102d Infantry. Age, 21 years; race, white; born, Massachusetts; date of admission, May 31, 1918; source of admission, transfer Base Hospital 18; machinist; alcohol, moderate; family history negative. Previous personal history: Good health; left school at 14—9th grade; steady worker; no neuropathic history.

History of present condition: Came to France October, 1917. Was at Soissons with division in March, 1918. Nerves all right; went up to Toul, beginning of April, all right till about April 15, when he was on his way up to join his company. A shell landed about 6 feet away. Didn't hear it. First he knew the explosion lifted him off the ground. Partly buried. Stunned—not unconscious. While he lay there a second one rolled him over again. He got up and was helped to aid station; he felt nervous and weak and was shaking all over. Was at Field Hospital No. 101 about 10 days; felt all right and returned to duty about May 1. Upset by a thunderstorm, and the batteries near him would keep him awake. Became jumpy. Could not sleep; headaches. Stayed on duty about two weeks. Came to hospital about the middle of May.

Subjective symptoms: Present complaints: Weak spells and headaches. "I'll be feeling fine and all of a sudden I get dizzy. I have to sit down." Last an hour. Headaches come and go—sharp, frontal; dreams a great deal—war coloring; sleep broken. "When there is a lot of noise I get nervous." Appetite and bowels fair. Patient is of limited intelligence; speaks in a low, rather quick, tense voice; restless with hands. Slight nodding, jerking of the head; feels quite a bit better; may be fit for line duty again.

Objective symptoms, condition on admission: Very slight generalized tremulousness more marked in hands, variable; body clean; weight, normal, 140; present, slightly underweight; general condition fair; eye grounds normal; skin and mucous membranes: on forehead, pea-sized reddish area; some pustular and some scab covered. Acne. Vascular system: Pulse 100; regular. Blood pressure: Systolic 110, diastolic 75. Nervous system: No sign of organic lesion; finger and lip tremor; no ataxia. Diagnosis on transfer card: Psychoneurosis, anxiety form.

Findings in this case at Base Hospital No. 18, neurological examination: Early development fairly normal; never very bright, but has gotten along well. Was doing well in his company until he was blown up, April 15, 1918. Sent to Field Hospital No. 101. Neurological status: Negative, except for coarse, jerky tremor. Diagnosis: Psychoneurosis, anxiety form. Recommendation: Transfer to Base Hospital No. 117 for further treatment.

Summary of case at Base Hospital No. 117: Admitted May 31, 1918. April 15, 1918, was blown up by a shell explosion, stunned, weak and shaky. After 10 days in the hospital he returned to duty, and about May 1, 1918, was upset by a thunderstorm and a barrage; became jumpy and developed sleeplessness and headaches. He came to the hospital about the middle of May. His chief complaints on admission here were weak spells, headaches, and being easily startled. He was a little tense and restless and had a slight nodding head tremor. He was negative physically aside from a bad facial acne. He showed good improvement while in the hospital.

Disposition: Return to duty B-1. July 3, 1918.

Final diagnosis: Psychoneurosis (concussion neurosis).

Postwar history, 1919-20: Present condition, poor. Is bothered with slight headaches and at times has dizzy spells. Has returned to his old work but does not like it, as it is in a cotton mill and he can not stand it. Is a yarn boy now; was formerly a fixer of machines. Has not worked a week steadily since his return.

In the summer of 1924 the patient wrote:

I feel fair. I still am nervous. I do not sleep well. The least bit of excitement makes me feel faint. I get tired quick at night but can not sleep sound. At present I am working one week and loafing a week. While out in the air I feel good, but while working inside I am all in at night. If I had a job outside I would feel a lot better. I have had three years of vocational training and it was a failure in my case, as I was knocked about and did not have a chance to learn enough to make a living at it. It is a long story and if you so desire I will write you later about my training career. If it is so in your power, I would like a hearing on my case. I had one hearing, but the persons involved did not have the least interest in the hearing.

The American Red Cross sent this report under date of March 12, 1925:

Mr. A. filed his claim on December 15, 1919, claiming as his disability shell shock. He was discharged from service on May 9, 1919, and was examined on January 19, 1920, and was given a diagnosis of neurosis, traumatic. He was considered to be disabled to a degree of 5 per cent with regard to vocational handicap. The report from the office of The Adjutant General of the Army shows treatment April 15, 1918, for psychosis, traumatic acute due to exhaustion of concussion of high explosives in action in line of duty May 19 to July 3, 1918.

He was given training on May 10, 1920, for one year as a cabinet maker. On May 12, 1920, he entered training at the Lowell Vocational School, Lowell, Mass. On August 16, 1921, he changed from training in the vocational school to placement training in cabinet making. On December 6, 1921, he was examined by the bureau doctor, and at that time he wanted to change his training from cabinet making to either telegraphy or plumbing. There was some question at that time whether the man would succeed in any work which required the skillful use of tools. The requirements for telegraphy were beyond his limited educational background.

On May 15, 1923, he was rehabilitated as a cabinet maker, and was examined by the bureau examiner in the Veterans' Bureau on May 7, 1923. The diagnosis was traumatic neurosis mild. His case was rated on June 7, 1923, and he was given a 10 per cent rating on this neuropsychiatric condition and was considered competent.

A follow-up visit was made by the Employment Service and it was found on March 21, 1924, that the man was employed at the ——— Textile Co., assisting in the packing room and inspecting cloth. He was getting \$21.26 a week. He has been working for this concern since the date of rehabilitation with the exception of one week and his work was considered satisfactory, although there was no future as far as promotion was concerned. It is interesting to note that he has never worked as a cabinet maker, although rehabilitated as such.

He was examined again by the Veterans' Bureau on May 28, 1924, and his disability was considered of a noncompensable degree due to service.

B., J. H., Pvt., Co., M, 168 Inf. Born, Iowa; date of admission, July 25, 1918; source of admission, Base Hospital No. 66. Drug store clerk; alcohol, abstainer. Previous personal history: No neuropathic history; left school at 17; third year high school; good health; operation for undescended testicle July, 1917. "When I take a long hike it leaves me pretty stiff the next day."

History of present disease: Came to France December, 1917; up the line in March, 1918; got on all right until July 14, 1918; was in trenches fixing an automatic rifle; doesn't remember anything, unconscious for about three hours; came to an infirmary; gradual emergence. Wasn't himself until next day; had bad headache; "not so shaky at any time." Was gassed at time; "lungs were sore"; short windedness is better now; headache some better; upset by air raid and thunderstorm July 15, the night he arrived at C. H. 13.

Subjective symptoms: Present complaints: 1. "Dull headache all the time. I don't shake much but I am a little nervous." Easily startled; shooting pains in forehead and back of head. 2. "My wind isn't what it always has been." "Takes a long time to get to sleep." Some war dreams; dizzy on stooping; feels fairly strong; appetite and bowels all right. Composed—good stuff; anxious to return to duty.

Objective symptoms: Condition on admission—body clean; weight, normal 130; present, normal. Wax in ears. Pulse, 88, regular. Right testicle half descended. Moderate fine finger tremor. Diagnosis on transfer card, shell shock. Diagnosis of ward surgeon, psycho-neurosis (concussion syndrome).

Report of disability board: Did not exist prior to entry into service. Duty in line of communications.

Disposition: Returned to duty B-2, August 14, 1918.

Final diagnosis: Psychoneurosis, concussion syndrome. Line of duty.

Condition on completion of case: Improved.

Post-war condition: September 29, 1919, "Back at work and feeling fine. Keeping books at present."

On July 23, 1924, he wrote:

My condition at the present time is a great deal better than when discharged and the only time that I can notice any trace of nervous trouble is upon being excited over some happening or some loud noise at an unexpected time. I can see no reason why my compensation should have been discontinued, as I have one bad lung at the present time which gives me some trouble. I really think if the proper authorities were advised that I would be given a just examination and no doubt would be entitled to some adjustment. If anything can be done it would be greatly appreciated.

I drew compensation from the time I was discharged in 1919 until the fall of 1922, when it was discontinued. Don't know just why it was dropped as the disability which I had besides the nervous trouble still exists and have been unable to get any satisfaction from the bureau at this time.

I was in the Samaritan Hospital in Sioux City, Iowa, in 1920, I think. Also the Veterans' Bureau in Des Moines, Iowa, a number of times the dates I can not remember. In the spring of 1923 I was in the Veterans' Hospital at Jefferson Barracks in St. Louis for about five weeks and discharged from that place with a discharge marked "condition unchanged."

GENERAL SYMPTOMS COMMON TO WAR NEUROSES

The classification or grouping has shown that the different types depend rather on certain sets of distinctive mechanisms and on certain almost specific traumatizing experiences than on symptomatology or on the final clinical picture. It is, therefore, necessary now to describe some of the more general symptoms common to many of these types and then to touch on some of the more general of the mechanisms.

Three are selected for description under the latter head, noting (1) what may be called, by analogy with general medical description, the reactions of the organism as a whole; (2) the fixation process, especially in its initial stage; and (3) the convalescent conflict.

There are certain symptomatic reactions of the organism to emotionally effective traumas, which represent its protective response as a whole and furnish the symptomatic background of the neurosis. As has been shown, such symptoms are capable of elaboration, fixation, and stereotype, according to the type of mechanism set in activity. For this reason some or all of those about to be mentioned may be found in any of the groups which have just been described. They may be regarded either as instantaneous reactions taking place at the moment of traumatic impact, or arising afterwards as a result of the emotional responses accompanying the traumatizing incident. These are, in the main, primary fear reactions, such as tremor, dyspnea, tachycardia, sweating, and sense of muscular weakness, and the resultant condition of headache, restlessness, and insomnia. All of these may be regarded as vasomotor in origin and purely physiologic in expression. They appear to be so closely associated with hyperemotional states seen in other than war experiences that they must be looked on as very general types of reaction with no specific war incidence at all. For this reason they are found as a kind of symptomatic background to almost all of the severer types of neuroses. The majority of the cases showed headache, and considerably more than one-half had insomnia. In most of the latter the insomnia was of brief duration, the headache was often very persistent. The headache in cases of concussion is somewhat differ-

ent, approaching closer to a specific symptom. Even in the development of the neurosis out of the concussion experience the headache had a more persistent character, a more definite localization, and appeared to produce more discomfort than those found in the other conditions. The characteristic headache was one of the most insignificant items in the diagnosis of concussion neurosis.

It is apparent, then, that there are in the war neuroses, more or less sharply defined clinical groups, sufficiently characteristic to warrant giving to them separate neurological designations. The first six of them have a more or less characteristic mechanism; the gas and concussion neuroses are separated out because of a definite etiologic sequence, the others are questionable neuroses but should be included in a classification in use at a neurological hospital in the war zone.

TREATMENT

No adequate statement of the treatment developed in a special hospital such as Base Hospital No. 117, can be given without describing the history and growth of the place, its spirit and purpose, and the individuals composing its staff. Therefore, the merest outline of methods used can be mentioned here. Each staff member was encouraged to work out and develop his own particular notion as to the best way to treat these cases; in this way, while many personal therapeutic technical methods were developed, often to a remarkably high pitch of efficiency, nothing new or original can be said to have been discovered. Whatever unusual facility there might have been developed in the handling of these cases came more from the importance attached to the study of the mechanism than to emphasis on symptoms.

The cases at Base Hospital No. 117 represented, on the whole, the very severe types of war neuroses, particularly so in the earlier and later months of its activity. In the beginning, evacuations were made indirectly to Base Hospital No. 117. After the St. Mihiel operation the forward screening was perfected enough to keep all but severe cases from reaching the rear areas. The therapy found effective in the acute cases (it was from these that the technique was developed) was found effective in the chronic types. But it took longer for the symptoms to disappear. The result with chronic cases was not as good as in the acute cases.

The first principle of the hospital was to cure the soldier and send him forward. If this was not possible he was to be fitted for military service in the Services of Supply with the hope that he would soon reach the front-line status. Very few cases were to be sent to the United States; therefore, recommendation to this effect was permitted only in the absolutely hopeless cases, and these chiefly on account of some undercurrent organic malady or previously undiscovered organic lesion of the nervous system. After the armistice began, however, the hospital received a great many cases from other places. These were chronic, defective, and other types, representing the unsuccessfully treated residue of hospitals, camps, and division back areas. As an offset to this the percentage of higher classification during the armistice increased likewise, so that the balance was maintained and perhaps ran to more cured cases than at any other time in the hospital's history. Very few cases of war neuroses devel-

oped *de novo* after November 11. The therapeutic problem after that time became much simpler and required much less effort and time.

The second general therapeutic principle was that a patient's stay at the hospital was to be as short as possible—the average in the whole hospital was slightly above three weeks. This included the officer material which required long treatment, and also included delays in getting patients out due to transportation difficulties and all other sources of block incident to a hospital operating at the time of active fighting.

The third general therapeutic principle was that all attempts made to cure a patient should be instituted as promptly as possible—within 48 hours if it could be arranged. Associated with this was the idea, also, that when the attempt was made it should be followed through to a finish at one sitting. This, of course, refers only to the hysterical symptoms.

The fourth principle was that the war neuroses were caused by a mechanism not under the patient's control in its initial phases, but subsequent to that, in two to four weeks, there might be a contributing factor in the retention of symptoms through the desire or wish of the patient to remain protected by his neurosis. At least this possibility was kept in mind, so that if a cure was not effected within that time the question of the patient's cooperation was brought up.

The fifth principle was that work of some kind was one of the most important aids in effecting symptomatic cures, so that always more than 80 per cent of the patients were engaged in work of some sort. This work was of a varied sort, work in the fields in season, road making, wood chopping, and work in a special shop—a therapeutic workshop carried on by reconstruction aides. The only novel feature in this was that it was carried on in a hospital to meet war conditions within a comparatively short distance from the front areas.

Of the more general and usual methods of treatment of cases of this kind nothing will be said, such as rest for exhausted cases and isolation for excited or markedly tremulous cases. Such things form a necessary part of every hospital, and it will be taken for granted that such methods were carried out as effectively as they could be in a hospital equipped under the handicaps existing in France at that time.

Such methods as presented an individual therapeutic view were to be found naturally in the hysterias and in the anxiety neuroses, and a description of what was tried out and found of value will be set down, rather to indicate the general trend of therapeutic effort than completely to describe them.

The point in view in hysteria was that the symptoms were the result of a promptly acting shock-dissociation process, either materially or emotionally produced. If in the former it was not in any sense due to definite organic changes in the brain but to some sort of preorganic thing, possibly of a molecular or circulatory sort—anything which does not preclude the possibility of an equally prompt restoration to the normal. It was further appreciated that there was a mechanism of fixation of symptoms from which the neurosis tended to develop and become elaborated, so that if the emotionally fixed objective symptom could be removed thoroughly, the rest of the neurosis structure would rapidly disintegrate.

Inasmuch as hysteria was thought of as a mechanism of unconscious origin, coming into activity without the patient's awareness and often without his subsequent knowledge, its symptoms were regarded by the patient as being mysterious and strange. He himself, then, neither understood what they were, why he had them, nor to what they were due. The first logical step, therefore, was to attempt to explain to the patient something about the mechanism that had been at work in making of him an hysterical type of war neurosis. The second was to assure him both of its unconsciousness and of the possibility of rapid disappearance provided he gave his cooperation, chiefly by developing a condition of receptivity as far as he was able to do so. The next step was the acquirement of an attitude of expectancy. Then followed the use of the many methods of suggestive symptomatic treatment designed to remove as quickly and thoroughly as possible, symptoms in the order of their importance to the patient. This, in turn, was followed by after-treatment aimed to emphasize the fact that the symptoms had disappeared, and furthermore, to fix the notion of the mechanism originating the symptoms and then to fix the mechanism of their disappearance. The last step was an attempt to so increase automatic inhibition that the symptoms could not reappear. This last was still in process of development when the war ended.

In the phase of explanation only very simple methods were used, depending much on the intelligence and understanding of the patient. With an understanding and belief in a definite mechanistic production of hysteria, it was not difficult to impart such belief to the patient. Without such belief and knowledge it would have presented great difficulties. The attitude of receptivity and expectancy grew up in the patient's mind automatically, as his belief and faith in his physician took hold of him, or it arose from his eagerness to get rid of an embarrassing or handicapping group of symptoms. It was possible in many instances to increase the attitude by maneuvers designed to stimulate his desire for treatment. The use of apparent indifference, delay, etc., often caused an increased state of eagerness in the patient to get well. There were developed many devices to increase these essential preparatory qualities to the attack on the symptoms themselves. Some of the staff developed, to a high degree, what was called ward morale. This meant the influence of the cured cases and cases cured of a similar set of symptoms, on the individual about to be treated. It also had reference to a rather mysterious thing called ward atmosphere. This was a reflection of the attitude of the nurse, physician, and patients to a patient who showed neither aptitude nor inclination to meet the cooperative demands which his case warranted. It is rather difficult to describe in a few words. In certain wards patients were cured quickly and remained so. It was not customary in these wards for patients to show symptoms for more than a little while after admission. It is of interest that this aspect of ward morale did not simply happen, but was consciously and carefully worked out by the physician and nurse.

The immediate attack on the symptoms was carried out by means of one or more of the suggestive methods in vogue throughout all the neurological services in all the armies. The suggestive treatment was either intensive—in which case, as a rule, the faradic current was used—or it was gradual, being

given at intervals. In some instances the battery was not used at all, persuasion and command, argument and reasoning being all that was required. In other instances, again, some other material type of suggestion was employed, as tuning forks or stethoscopes in deafness, and tongue depressors in aphonia. Whatever method was used, great care was always taken to convince the patient that the results attained were only intensifications of what he was perfectly able to do himself. The faradic current, for instance, used to stimulate a muscle in a case of paralysis, was only a means of demonstrating the functional capacity of the muscle, so that the idea of its paralysis, engendered by the process dissociating it for the time being out of consciousness, was negated.

The personal modifications of the technique of intensive suggestion, developed by members of the staff at Base Hospital No. 117, was used in every type of hysteria and in all its various manifestations. It was very generally effective in causing these symptoms to disappear. Tremors of all kinds, choreiform movements, fixed position, all types of paralysis, blindness, aphonia, deafness, etc., were daily cured, often in a few minutes, seldom taking as much as an hour. There is nothing surprising in this, especially if one considers that a certain percentage of these disappeared of themselves. Of more importance and of greater interest was the surprising degree of individual technique which grew up about each of the more expert therapists of the staff.

The hysterical amnesias as a rule were treated differently, although in some instances much of the same technique as the above was followed. More often, however, these cases were treated by various associative exercises leading back to the event for which the amnesia existed and for which it exercised its protective influence. By bringing into full consciousness this event and forcing the patient to face, and square himself with it, the path of reassociative memory was found, and the amnesic block gradually grew less and finally disappeared. It was either complete, leaving the thread of memory without a break, or some small remnant of block still persisted. In the latter instance it might be left as a perfectly harmless amnesic islet, as it was termed, or dissipated by putting the patient under a very mild degree of hypnosis. In this condition, no great difficulty was found in reestablishing the flow of consciousness again. A small series of amnesias was treated from the start by hypnosis.

The therapy of the anxiety neuroses was a much more difficult thing to develop and apply. The condition itself presents a much more complicated form of neuroses than the cruder reactions of hysteria. The anxiety neurosis, as has been said, dips down deeply into the personality and touches on factors that are associated with the make-up of the individual. It has a strongly ethical character, presenting conflicts of various kinds. This dissociation has very little direct material expression and presents, for this reason, little opportunity for a direct therapeutic attack. An anxiety neurosis case takes a great deal more time both to develop and to treat, and the individual who is capable of having it has reacted to it much more deeply than a hysteria case ever does.

Besides this, he is apt to be more intelligent, therefore, more suspicious and very much less suggestible than the hysteria case. A certain amount of study must be given to past experiences, to his former life, to his career in the

Army, and to the succession of events which brought him into the hospital. It is necessary to acquaint the patient at first-hand with the causes that led to the condition, the nature of the condition. He must be instructed as to the nature of conflict, his in particular, and as to the function of repression. Above all, he must be taught to face the whole matter as a section of experience which has come into his life, and which will remain as a part of himself as long as he lives or until the memory of it becomes fainter with the piling up of those of more recent origin.

The therapeutic aim in the anxiety neuroses had formerly been to encourage the patient to forget his experiences and to aid by his own effort the automatic repressive tendency already existing. The new point of view was to attempt to train the patient to face, and to face daily as a matter of course, the experiences he had been through, no matter how uncomfortable or terrifying they happen to have been. It was in a sense a modified psychoanalytic procedure adapted to a war-born condition, divorced from a good deal of the technical complications of the method used in peace times.

A patient was encouraged to talk about his experiences, to go over the emotional states which accompanied them, and to examine himself as critically as he could in reference to them. It is one thing to face a past event and to measure oneself in the light of that event; it is quite a different thing to try to forget an event and thus allow the criticism, so to say, to go on unconsciously and the resulting emotion to remain as the only conscious evidence of the conflict going on sublimated and beyond reach. The former state of mind was encouraged in the patient, the latter was to be avoided.

The chief conflicts found in the anxiety neuroses were analyzed out in some such manner as this. The technique differed according to the individual therapists. None found it necessary, however, to employ any more complicated technique than that of question and answer. A perfectly frank account of experiences, with the proper narrative sequence of events, together with the critical comments of the physician, was all that was required in many instances to prepare the way for a successful therapy. The knowledge of such cases acquired by the therapists led to the proper emphasis of the points he was trying to make, much in the way that a trained psychoanalyst in the Freudian sense indicates to his patient the line of associative events he desires to bring up into active consciousness. In the peace neuroses this is frequently a matter of great difficulty on account of the patient's unwillingness to face the embarrassing nature of the conflict from his point of view. In the war neuroses the conflict is formed out of simpler elements and, since the whole thing is more recent, the repressive function has had much less opportunity to bury them deeply in the lower levels of consciousness. Furthermore, the conflicts were so frequently conventionalized and so often found repeated in different individuals that it was an easy matter to present them to the patient with only a little assistance from him. In this way the *rapprochement* between patient and physician was not difficult to establish, because it was found that there was little to conceal and less possibility of deception. The favoring element therapeutically was, of course, the central motive underlying all efforts of treatment, that is, the duty and necessity of fulfilling his obligation as a soldier—the return to duty. Only

in exceptional cases was this ever a matter of argument or even of doubt. There could be little weighing of contending motives in such a situation. The duty of a citizen may present many points of conflicting interests, that of a soldier none. That is, none, if the point is reached, when he is brought face to face with the definite reality of his military position.

Although the methods of treatment and the general therapeutic attitude toward a patient with anxiety neurosis can be set down in so simple a manner as this, the implication does not follow that the procedure was an easy one or that it was always successful. Such certainly was not the case, for no conditions in the war neuroses were so difficult to handle or required so much effort. Comparatively few men ever acquired the knowledge, patience, tact, insight and firmness to treat such cases adequately. In Base Hospital No. 117, and no doubt in other places, too, there developed among the staff a few men who became in a way anxiety neurosis specialists. The contrast to hysteria in this respect was marked. Almost anyone after a little instruction could treat the ordinary hysterical case successfully, whereas only a few ever qualified as good therapists for the anxiety cases.

The therapeutic methods in use in the other types of the war neuroses need scarcely be mentioned in detail. Apart from the usual symptomatic treatment, the conventional hospital manner of handling the daily discomforts of a ward full of patients, there was little to distinguish this hospital from any other. Drugs were given as seldom as possible, and then only to meet the simple complications of an average patient in a hospital. Bromides, hypnotics, and analgesics were given with the greatest reluctance, and for the most part the patient did better without them. It was necessary at all times to combat the natural desire of a patient for some more tangible evidence of treatment, but this the nurses were for the most part able to do.

Therapeutic use was made of many other agencies not usually mentioned in describing methods of treatment. All of them had to do with strengthening the patient's morale, and forcing on his attention at all times, the necessity of getting out of the hospital and back to duty.

The hospital chaplain, approached this through wisely and cleverly designed sermons touching on the spiritual phase of courage, loyalty, devotion, and patriotism. The sermons and religious exercises were planned in part toward this end, as were the weekly talks by members of the staff and sometimes by visitors to the hospital. In other ways the military atmosphere was kept alive by every means possible. The decorations in the recreation huts were all planned to keep the military atmosphere in the minds of the soldiers through stirring posters and scenes of actual war conditions. The walls were covered by sketches drawn for the most part by patients, of men going over the top, artillery going into action, airplane fights, etc.

Sympathy in the ordinary meaning of the term had little place in this hospital; intelligent insight and appreciation of the mechanism of the war neuroses in a measure took its place. The military necessity was accentuated and kept constantly in mind, but notwithstanding a certain grimness in the hospital's attitude to its patients, not the slightest suggestion of harshness or

severity was ever permitted. The war neuroses were regarded as temporary conditions into which a soldier might fall and thus become a subject for medical treatment. The treatment was found to fail unless the efforts made to help him met with the cooperation of the patient and a desire on his part to get well. The hospital was planned and equipped for the purpose of returning him to duty and, given his support, in most cases, this was accomplished. If expressing his recent experiences by talking, writing, or even, as was done in some cases, by the most lurid drawings, was an aid to this end, such efforts were encouraged by whoever might happen to be at the time helping on his case, be it chaplain, civilian aid, nurse, or some other specially qualified member of the hospital personnel.

CHAPTER VI

THE CARE AND DISPOSITION OF CASES OF MENTAL DISEASE COLLECTING STATION

In Chapter I of this section explanation was made of the fact that, in general, it was planned by the Medical Department not to return to duty in France soldiers who had been admitted to hospital with psychoses or other mental diseases, but to return all such soldiers to the United States for further treatment. In carrying this plan into effect a collecting station for cases of mental disease was established for the forward area, at Base Hospital No. 116, an integral part of the hospital center at Bazoilles.¹ Provisions also were made in other hospital centers, and at most base hospitals not connected with hospital centers, for suitable care of neuropsychiatric cases pending their collection at base ports with the view of their return to the United States. For present purposes it will suffice to state briefly, except in so far as the base ports are concerned, the activities of the neuropsychiatric department of the hospital center at Bazoilles.

NEUROPSYCHIATRIC DEPARTMENT, BAZOILLES HOSPITAL CENTER *

This department began to function on July 20, 1918, as a part of Base Hospital No. 116. Though nominally under the administrative supervision of the commanding officer of the base hospital, the neuropsychiatrist in charge of the department was permitted to exercise all necessary latitude in the operation of his department.

The buildings provided for the neuropsychiatric department consisted of six wooden demountable barracks, of the same character as those used throughout the center for wards and general purposes. These were 100 feet in length. They were located on relatively high ground, to the rear of Section IX of the hospital center, occupied by Base Hospital No. 81. Four of the buildings were used for patients, with a total normal bed capacity of 80. One building was used for administrative purposes as well as barracks for the enlisted personnel on duty in the department; another was used for kitchen and mess hall. After some months of operation, a building of standard width and 50 feet long was added to the group as a dormitory for nurses, thus permitting housing them at a convenient distance from the wards wherever they were on duty. At times, the patient capacity of the department was inadequate, thus necessitating using an additional ward of Base Hospital No. 116.

From three to five medical officers were on duty in this department during the greater part of its existence. The enlisted detachment consisted of 4 non-

* The statements of fact appearing herein are based on the "History of the Bazoilles Hospital Center," prepared under the direction of the commanding officer by members of his staff. On file, Historical Division, S. G. O.

Constitutional psychopathic states:

(a) Inadequate personality.....	112
(b) Emotional instability.....	40
(c) Paranoid personality.....	31
(d) Sexual psychopath.....	10
(e) Pathological liars.....	5
Total.....	198

Defective mental development:

(a) Moron.....	256
(b) Imbecile.....	7
Total.....	263

Psychoneurosis:

(a) Concussion syndrome.....	2
(b) Hysteria.....	115
(c) Neurasthenia.....	37
(d) Psychasthenia.....	26
(e) Hypochondriasis.....	13
(f) Enuresis.....	1
(g) Stammering.....	1
(h) Effort syndrome.....	5
(i) Anxiety.....	4
Total.....	204

Inebriety:

(a) Alcohol.....	49
(b) <i>Morphine</i>	16
(c) Cocaine.....	1
Total.....	66

Epilepsy, idiopathic.....	156
Cerebrospinal syphilis.....	36
Endocrinopathy, thyroid.....	13
Meningitis, cerebrospinal, epidemic.....	6

Miscellaneous:

Acute hallucinations.....	4
Traumatic psychosis.....	2
Hydrocephalus.....	1
Residual birth palsy.....	1
Division extensor tendon, ring finger.....	1
Embolism, pulmonary.....	1
Polyneuritis.....	2
Acute confusional state.....	4
Pulmonary tuberculosis.....	2
Paratyphoid fever.....	1
Peripheral nerve palsy.....	7
Labyrinthine hemorrhage.....	1
Acute bronchitis.....	2
Nephritis, acute.....	1
Progressive muscular atrophy.....	1
Spinal sclerosis.....	1
Typhoid fever.....	2
Toxemia, acute.....	1

Miscellaneous—Continued.

Chronic prostatitis.....	1
Periostitis.....	1
Total.....	37
Total cases admitted.....	1, 654

Disposition of cases (summary)

Evacuated to Evacuation Hospital No. 31, A. P. O. 731.....	3
Evacuated to Provisional Base Hospital No. 1, A. P. O. 731.....	4
Evacuated to Base Hospital No. 79, A. P. O. 731.....	18
Evacuated to Base Hospital No. 116, A. P. O. 731.....	24
Evacuated to Base Hospital No. 8, Savenay.....	623
Evacuated to Base Hospital No. 117, A. P. O. 731.....	17
Evacuated to Base Hospital No. 214, Savenay.....	909
Evacuated to Evacuation Hospital, Neufchateau (French).....	2
Evacuated to Tours.....	5
Evacuated to Hospital Center, Angers.....	27
Evacuated to duty.....	9
Evacuated to Assistant Provost Marshal.....	5
Absent without leave.....	1
Died:	
Manic exhaustion.....	1
Cerebrospinal syphilis.....	1
Pneumonia, lobar, acute, bilateral.....	1
Pneumonia, bronchial, acute bilateral.....	1
Meningitis, acute suppurative.....	1
Typhoid fever.....	1
Pulmonary embolism.....	1
Total cases disposed of.....	1, 654

Summary of monthly disposition of cases

Total number of evacuations by months:

July, 1918.....	54
August, 1918.....	132
September, 1918.....	149
October, 1918.....	128
November, 1918.....	200
December, 1918.....	125
January, 1919.....	156
February, 1919.....	257
March, 1919.....	262
April, 1919.....	184
Total number of cases evacuated.....	1, 647
Died.....	7
Total cases disposed of.....	1, 654

SPECIAL TREATMENT HOSPITALS

BASE SECTION NO. 1^b

It was at Base Hospital No. 8, Savenay, in February, 1918, that the first special provisions for mental patients in France were made. Before that time only the roughest makeshift methods existed. In the early period of the existence of the neuropsychiatric department of this hospital, from January 1 to June 1, 1918, it consisted of two wooden barracks of a capacity of 90 beds each. An interesting feature of this organization was that the mess hall for patients suffering from mental and nervous diseases was not separate, but the neuropsychiatric patients, except those who were disturbed, ate with the other patients of the hospital center. One ward was partitioned off to care

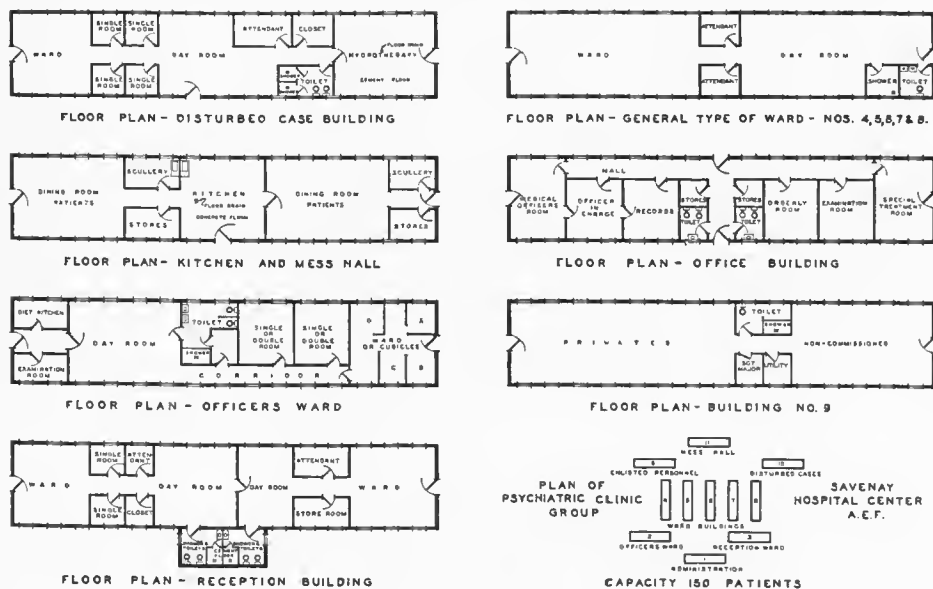


FIG. 3

for patients who were disturbed and consequently needed to be closely supervised.

The total admissions during the first five months of the existence of the special neuropsychiatric service of Base Hospital No. 8 was 369. After June 1, 1918, the admission rate rapidly increased. The admissions in June were 256, just about two and one-half times the admissions in May.

On June 11, 1918, the personnel of Base Hospital No. 117 arrived at Savenay from the United States.² This was a very important event in the neuropsychiatric work of the American Expeditionary Forces. Although all the personnel for the long-awaited special base hospital for war neuroses which had been so carefully recruited in the United States could have been used at

^b Unless otherwise indicated, the statements of fact appearing herein are based on the "History of the Savenay Hospital Center," prepared under the direction of the commanding officer by members of his staff. On file, Historical Division, S. O. O.

La Fauche, where a nucleus for the new hospital was already in operation, the care of mental patients at Savenay awaiting transportation to the United States also required trained officers, nurses and enlisted men at this base port. Accordingly, 3 medical officers, 28 nurses, and 33 enlisted men were detailed to staff the rapidly growing psychiatric department at Savenay.

This detachment of a goodly portion of the personnel from Base Hospital No. 117 unit was in conformity with the following letter from the senior consultant, neuropsychiatry, A. E. F., to the chief surgeon, A. E. F., which had been written in the preceding February:³

1. The personnel of Base Hospital No. 117 (neuropsychiatric hospital), now under orders to proceed to France, is made up of medical officers, noncommissioned officers, female nurses, and enlisted men who have had experience in the care of mental and nervous diseases. As it was thought wise, in organizing this hospital, to consider the possibility of having to establish it in two sections, "psychiatric section" for the treatment of mental diseases and "neurological section" for the treatment of the neuroses, the personnel was selected with this contingency in mind.

2. As the plan of staffing the psychiatric department established at Base Hospital No. 8 with part of the personnel of this hospital and the hospital for neuroses at La Fauche with the remainder has been decided upon it will be necessary to divide the personnel upon the arrival of the unit in France.

3. It is recommended, therefore, that the plan of division indicated in the inclosed tables be adopted.

4. It is not practicable to suggest the assignment of medical officers until the names of those accompanying the unit from the United States are known. These officers will be the commanding officer, the adjutant, an electrotherapist, and three ward physicians. When this information has been received it will be possible to complete the personnel from medical officers in the American Expeditionary Forces and in the special military hospitals for mental and nervous diseases in Great Britain.

5. It is recommended that the Surgeon General be requested to cable the names of the medical officers who will be sent from the United States with this hospital and the date of their departure, in order that the necessary orders may be requested.

Until the arrival of the new personnel referred to above the psychiatric department had been conducted under the direction of a medical officer, with two or three young medical officers who had had psychiatric training and a few psychiatric nurses and enlisted men who had worked in State hospitals.

Additional wards now became necessary, for, with the increased participation at the front of many American divisions, neuropsychiatric cases increased at a more rapid rate. This is shown by the greater number of mental cases sent to Base Hospital No. 8, at Savenay, for treatment and for evacuation to the United States. In July, 405 patients were admitted; in August, 588; in September, 887; in October, 658; in November, 809; and in December, 412. In the latter part of August, 1918, three more wooden barracks were added, providing accommodations for about 500 patients. In the meantime, 11 wards of special construction had been erected for this service in a locality some distance from the main hospital. These wards, situated on a slight elevation of ground, consisted of the following buildings: One administrative building, in which were located the offices of the commanding officer, adjutant, and other personnel engaged in the routine administrative activities of the hospital; one ward for officer patients; a mess hall; a barrack for enlisted personnel; and a ward for disturbed patients. The remaining wards were of the uniform type,

with ample facilities for the care of these patients, including day rooms, shower baths, and toilet facilities. These additional buildings provided accommodations for something less than 200 patients, but by using officers' and enlisted men's barracks, the capacity was expanded to over 250. During this period, however, the barracks connected with Base Hospital No. 8 were still retained for neuropsychiatric purposes.

In October, 1918, four additional buildings of concrete block were added to the 11 wards above mentioned. When these were completed the original barracks of Base Hospital No. 8 were relinquished. No diminution occurred in the admission rate after the armistice began and, therefore, the unit, as finally constructed, proved inadequate. Indeed, in the late fall of 1918, admissions were so rapid that the commanding officer of the hospital center found it necessary temporarily to designate wards for the reception of neuropsychiatric cases in adjacent units, i. e., Base Hospitals Nos. 69 and 113. The following letter from the senior consultant in neuropsychiatry to the chief surgeon, A. E. F., explained the difficulties and needs of the hospital at Savenay late in October, 1918:⁴

1. The steady increase in the number of mental cases admitted to the psychiatric department of Base Hospital No. 8 shows that, in spite of better facilities for their transportation to the United States, more extensive arrangements for their care are needed than were at one time thought desirable.

2. Some idea of the magnitude of the problem of providing even temporary care for the insane of the American Expeditionary Forces is shown by the fact that more cases are admitted to the psychiatric department of Base Hospital No. 8 each month than in the psychopathic wards of Bellevue Hospital, which serves a city of more than 5,000,000 people.

3. In order to handle this question in a thoroughly satisfactory way, to relieve hospitals of these cases, and to evacuate promptly those collected in the psychiatric departments of the advance and intermediate sections of the S. O. S., it is recommended that one of the hospital units at the Savenay center now nearing completion be constituted a psychiatric base hospital and devoted entirely to this purpose.

4. Such provisions would increase the efficiency of the work, provide for any increase likely to be expected, and meet certain difficulties regarding disposition of personnel, care of insane officers, etc., which exist when such important work is carried on as part of another hospital. The buildings now used by the psychiatric department can be used to advantage for other purposes.

5. The personnel for such a psychiatric base hospital can be provided from the special personnel of medical officers, nurses, and enlisted men with psychiatric training now at Base Hospital No. 8 and from Neuropsychiatric Replacement Unit No. 1, which has recently arrived at La Fausse, and Neuropsychiatric Replacement Unit No. 2, which is expected to arrive shortly.

6. The personnel required for such a hospital with a capacity of 1,000 beds is as follows:

Commanding officer.....	1	Nurses, female.....	40
Medical director.....	1	Reconstruction aides.....	4
Adjutant.....	1	Nonecommissioned.....	20
Quartermaster.....	1	Privates and privates first class.....	80
Dentist.....	1		
Chaplain.....	1	Total.....	164
Mess officer.....	1		
Registrar.....	1		
Ward physicians.....	12		
Total commissioned.....	20		

7. The commander of the Savenay Hospital Center fully agrees in these recommendations and was the first to suggest this as a solution of a problem which is growing very rapidly in size and importance.

On November 6, 1918, the neuropsychiatric service at Savenay was organized as an independent unit, taking over the quarters already occupied. The hospital at this time was officially designated Base Hospital No. 214, A. E. F.

During the latter part of December, evacuations became so rapid and admissions were delayed to such an extent that for a short time there were but 65 patients in the hospital. The closing of Base Hospital No. 117, at La Fauche, however, soon increased the rate of admissions, so that early in January, 1919, the patient population of Base Hospital No. 214 exceeded 700, including 40 officers. The admissions during January, 1919, were 885, and in February, they were 824. This was quite in excess of the capacity, especially since, except as a temporary expedient, the use of wards of adjacent units was not feasible. Under these circumstances, the commanding officer of the center gave directions that one of the new 1,000-bed units be taken over as a neuropsychiatric hospital.

This new unit of 1,000 beds was occupied for the first time on January 21, 1919. The construction of the wards was not so well adapted as that of the first hospital, which had been designed for the purpose, and additional construction was necessary. A considerable part of this extra work was done by patients. A sitting room was built in one end of the officers' ward and furnished by the American Red Cross. A similar sitting room for nurses was arranged in another ward. A staff conference room was constructed in the officers' barrack. A diet kitchen, furnished by the American Red Cross, was installed in the building used for occupational therapy. Four wards were constituted closed wards, with screened windows, and in these wards partitions were constructed in such a way as to make patients' day rooms. One ward building was utilized for a Red Cross recreation hut, and appropriately furnished. The large building adjacent to the mess hall, used in other units for surgery and dressings, was fitted up for a work shop. This work shop was especially well equipped, for in it was placed the material formerly used at Base Hospital No. 117, consisting of brass work, tools, lathes, carpenter sets, and an acetylene welding apparatus.

The routine of the hospital was systematized in the following way: For purposes of classification all patients were admitted to one large admitting room of 90 beds. A special nursing force was maintained here. Observations by the staff were made at once in order to classify the cases as rapidly and accurately as possible. The ward surgeons and nurses of the receiving ward were especially well trained for this work. All patients, upon admission, were seen by the receiving officer and assigned to their proper wards. The case of acute psychosis, of chronic alcoholism, and of delinquency were sent at once to closed wards. Mild psychoses, epileptics, and mental defectives were kept in open wards under supervision. Cases of psychoneurosis were sent to separate wards, and, as soon as space was available, to the specially constructed wards mentioned above.

By examining and classifying every case at once, administrative difficulties were reduced to a minimum. During this period but two serious accidents occurred, although delinquents of every description came through the service. At the same time, patients were given as much liberty as possible, indeed,

liberties which in civil life would have been considered impossible. As before stated, there was no separate mess for many months, patients from neuropsychiatric wards going to the general mess. The Red Cross recreation hut of the center, likewise, was used by all, and the convalescent patients from the neuropsychiatric service often contributed to the entertainments by musical or dramatic performances.

Patients evacuated to the United States by months

January to June, 1918 (not recorded by months).....	116
July.....	217
August.....	455
September.....	839
October.....	695
November.....	801
December.....	650
January, 1919.....	697
February.....	721
Total.....	5,075

The small proportion returned to duty—4.38 per cent of the total hospital service—tells the story of the main functions of this hospital during the period of active warfare and immediately thereafter. It served principally as a collecting center for difficult and chronic cases of nervous and mental diseases which were to be returned to the United States. Its problem was to study and to diagnose these cases and to provide specialists to care for them in France and while en route to the United States.

The organization continued to operate during the spring of 1919. At one time in April it had a population of 1,018 patients actually resident in the hospital. Evacuations were very rapid thereafter so that at the end of May the population fell to under 400. There were at that time from 60 to 100 cases among our forces in Germany to be sent to the hospital and a few cases were admitted daily from various other places. But with the rapid rate at which troops were sent back to the United States, the hospital population soon dwindled. On June 21, Base Hospital No. 214 ceased to function. The residue of the patients were transferred to Brest and to Base Hospital No. 113, where adequate neuropsychiatric services were maintained. Officers, nurses, aides, men, money, and workshop materials were sent to these organizations. The remainder of the unit returned to the United States.

CLINICAL SUMMARY

A large amount of clinical material passed through this hospital, no less than 6,093 cases having been admitted up to March 1, 1919. Observations were necessarily incomplete and the minute recording of cases impossible. The various types, some unusual in civil life, came under observation with such frequency that they became fairly familiar. The consequence was that clinical pictures, which otherwise would have been uncertain, became well established in the understanding of the staff. A statistical summary of the clinical material is given in the following tabulation, which likewise provides the major headings under which the clinical material will be briefly considered.

Mental and nervous cases classified D at Savenay in 1918-19

	1918		1919 January- February	Total ^a
	January- June	July- December		
Psychoses.....	242	1, 222	452	1, 916
Constitutional psychopathic states.....	85	434	115	634
Mental deficiency.....	87	297	140	524
Epilepsy.....	79	574	99	752
Psychoneuroses.....	167	766	730	1, 663
	660	3, 293	1, 536	5, 489

^a There were in addition 124 cases diagnosed "organic nervous diseases," which brings the total to 5,613.

PSYCHOSES

The number of frank psychoses, amounting in all to 1,916 cases, is probably not excessive considering the forces engaged. Interest in these cases is more in their clinical character than in their numbers. It was soon observed that, in addition to ordinary civil life types, many unusual cases were encountered. Although many familiar types of dementia præcox, general paresis, and other diseases were admitted, they were by no means the only types seen. Soon after active hostilities began, cases appeared with which the staff were unfamiliar in their civil life experience. In these unusual cases, the reactions and clinical pictures did not conform to any recognized types. It is possible that a number of these unusual cases might have become clearer by adequate previous histories and longer periods of observation. This, however, was probably not true of all; so that a tentative formulation of these unusual cases deserves mention at this time. They probably do not form a distinct class from every point of view. They doubtless have a common etiology, however, and they have groups of symptoms in common which are sufficiently striking to warrant them being discussed as a group. Such cases at this hospital were referred to by the staff as the "war psychoses," and so this term is somewhat arbitrarily used. The war psychosis, of course, is an interesting "situation" psychosis, and any clinical description of war neuropsychiatry would be incomplete without a discussion of it.

WAR PSYCHOSES

It has been stated by some observers that the war has failed to bring to light any unusual forms of mental disorder, all cases being merely those familiarly met with in civil life, possibly colored by a war setting. This is not in accordance with the observations of the staff of this hospital. Unusual grouping of symptoms, in fact, entire clinical pictures were encountered to such an extent, as stated above, as to warrant separation of these cases into a group.

The cases in question, termed war psychoses, were observed in considerable number. No actual record of their number was kept, but they probably amounted to one-fifth of all the cases diagnosed as psychoses. Many of them improved considerably while at the hospital, and it is quite probable that by the time they reached the United States the acute symptoms had disappeared.

The following clinical picture is a composite of what was most frequently observed. Patients on admission were dazed, confused, and disoriented, and as

a rule they were not accessible during the acute period. They generally thought themselves at the front under fire, and were anxious and apprehensive. They wandered about rather aimlessly and showed bewilderment and confusion. Some were quite agitated. Frequently they preferred to be by themselves and volunteered very little in the way of conversation. As a rule they were depressed, at times so profoundly as to attempt suicide. A few cases were observed in which there was an elevation of mood. The possibility of a manic-depressive condition was considered in these particular instances, but was regarded as improbable. In this general setting of clouding of consciousness, confusion, and bewilderment, there were active hallucinations of sight and hearing. Patients complained of seeing shells bursting, and of hearing the whistling of shells and bullets. In their highly emotional state it is probable that a part of this was misinterpretation of noises about the hospital. The symptoms were worse at night, but were by no means confined to the night-time. This general condition had some features in common with the psychoneuroses, such as anxiety, fearful dreams, visual hallucinations; but the condition differed in that they were inaccessible, disoriented, and confused, with marked mood changes and no insight. Not infrequently there were delusional ideas of transient character and of a changing nature, the content of which had to do with war experiences.

The interpretation of the nature of the conditions above described presents a number of difficulties. In some respects they resembled protracted exhaustive psychoses. It is thought, in view of the anxiety, the depression, the character of the hallucinations and the emotional conditions, that emotion and excitement played quite as prominent a part as exhaustion. Since the patients, as a rule, were inaccessible, no clear idea could be gained as to what they had experienced; however, it is possible that many of them had been under heavy shell fire, but under what circumstances this was experienced can not be stated. It was necessary to return these patients to the United States as soon as their condition warranted transportation. The impression was that the prognosis was good. The psychosis was considered an acute one, having little in common with ordinary civil life types, although many cases bore the diagnosis of dementia præcox on their admission tag.

Another small group of cases was observed resembling somewhat those above described, but different in a number of respects. Such patients were admitted in a delirious condition. As a rule these patients had not been at the front, possibly having but recently landed in France. They were confused, rambling in conversation, inaccessible, and restless. They were disoriented and presented the picture of delirium. The thought content was not remarkable. The condition was considered an hysterical delirium, arising in predisposed individuals.

Of the well known psychoses, such as dementia præcox, manic-depressive psychoses, and others, a few features of interest were observed. A number of cases of dementia præcox appeared to have developed since enlistment. Some gave a history of symptoms previous to enlistment and a fair proportion of these had had previous hospital residence. In the manic-depressive cases there were relatively more with depression than with elation. Both showed a

war coloring, especially the depressions, and in fact, the thought content of many of the self-accusatory and depressed patients had to do solely with war conditions. They frequently had the idea that they were being accused of betraying their country or of being German spies. It is a noteworthy fact that comparatively few acutely maniacal cases were encountered. Their management was not as difficult as had been anticipated although several very acute cases were admitted.

PSYCHONEUROSES

No attempt will be made to discuss in detail the psychoneuroses at this point, because more favorable opportunities were offered at other hospitals for the observation of these cases. As a rule, when these patients reached this hospital the psychoneurotic symptoms had existed some weeks and even months, and so they presented clinical pictures differing in character and degree from those seen near the front. Only observation as to the general character and disposition of these cases as it pertains to this hospital will be made at this time.

It is probable that no cases coming under the care of medical officers were as imperfectly understood at the beginning of hostilities as the psychoneuroses. As has been pointed out elsewhere, information regarding them had been sent from the chief surgeon's office, and, likewise, data of great value were available from both French and British sources. Nevertheless, the nature of these conditions was unfamiliar to most medical officers other than neuropsychiatrists. It was for this reason, as before mentioned, that weeks elapsed before plans which had been carefully arranged for the care of these patients were in satisfactory operation. During the early period of hostilities, as stated above, the psychoneuroses did not always come under the observation of the officers designated to take care of them. Some of these patients were sent from advance areas directly to base hospitals, where they were admitted to wards of the medical or surgical service. The fact that the case was a neurosis and not an organic disease was not always appreciated. Such cases were retained in base hospitals without improvement and many of them eventually arrived at Savenay for disposition. Others were classified by medical boards at base hospitals, sent to training camps not fully recovered, and having been found unfit at these places were transferred to Savenay. It can be readily seen that these cases, while relatively few in number, were unfavorable types for early recovery. Fortunately, their number was not great. In a short time steps were taken by the chief surgeon to insure the sending of psychoneuroses to psychiatrists at the front and not directly to base hospitals in the Services of Supply.

During the period of active hostilities the number of cases of psychoneuroses arriving at this hospital was not relatively large. Two general types were recognized; namely, those resulting from battle experiences and those of ordinary civil life types, the latter probably latent or actually existing prior to enlistment. The civil life types, such as neurasthenia and psychasthenia, in most instances, came under observation soon after arrival in France and never reached the front. A certain portion of these were classified for duty in the Services of Supply and the more severe cases were returned to the United States.

The psychoneuroses arising from battle experiences came from two main sources. At one time a number came from base hospitals or reclassification camps, without previously having had special treatment. It was possible to return a considerable number of these cases to duty, and some were sent to Base Hospital No. 117. Other cases came from neurological hospitals in the advance section, mainly from Base Hospital No. 117. Cases arriving from these hospitals were intended for evacuation to the United States, being considered constitutional types with unfavorable outlook for recovery in the immediate future. After hostilities ceased, arrangements were made by which the psychoneuroses of all sources eventually came to this hospital, and this accounts for their increase in number during the latter months of the hospital's history. It was not the policy, after the armistice began, to classify these cases for limited service in the American Expeditionary Forces. They were returned, therefore, to the United States for disposition, the severe cases undergoing a period of treatment before evacuation.

There was one unusual feature of the symptomatology observed in this hospital. It was found that a number of cases of mental deficiency, epilepsy, and mental diseases exhibited war neuroses, such as mutism, tremors, or hysterical hemiplegia. This association of symptoms was not infrequent and these cases presented very unusual clinical pictures as a result.

EPILEPSY

Cases, in comparatively large number, amounting in all to 752, were diagnosed epilepsy. These cases afforded ample opportunity to observe the various manifestations of epilepsy, such as major seizures, petit mal, and epileptic equivalents. In addition to these well-known manifestations of epilepsy, the constitutional make-up of such patients formed an important part of their disability, and at times was of more significance than the actual seizures. In other words, the seizures themselves occurring at rare intervals, might not have been disqualifying, but the neurotic or defective constitution as a background rendered these patients unfit as soldiers. The vast majority of these cases were highly neurotic, indeed to such an extent that at times it appeared that the disease should be interpreted as a severe aggravated neurosis of which the seizure, while the most apparent symptom, was not the most important.

Many border-line cases were seen, which were thought to belong to this general group. Such cases frequently had slight mental defect and were sluggish in mental reactions. They presented numerous neurasthenic complaints of long standing. With this condition would occur minor attacks of loss of consciousness, with slight confusion and with occasional frank epileptic seizures. In these cases, of which there were many, the mental defect and the constitutional neurotic condition were of more importance than the actual attacks. Many cases came under observation who had had frank seizures at frequent intervals since childhood. These cases were readily recognized. Numerous types of epileptic equivalents were also encountered. Epilepsy was often associated with alcoholism. Where epileptic seizures occurred on an organic basis, the cases were classified as organic brain disease.

The question of so-called hysterolepilepsy arose at times, especially since this diagnosis occasionally appeared on the field card. No great difficulty was experienced in distinguishing the seizures of epilepsy from hysteria. A careful history and clinical observation were all that was necessary as the hysterical cases bore only a superficial resemblance to true epilepsy.

AMNESIA

These cases are discussed at this time because of the relationship of a number of them to epilepsy. Cases were encountered in relatively large number, in which patients absented themselves from their organizations for periods varying from several days to several weeks. These patients maintained that they had no memory whatever of what had transpired. They either returned themselves or were returned by the military police. Such instances occurred in both officers and men. A number of them were frank cases of epilepsy, the period of amnesia occurring either before or after a seizure or being an epileptic equivalent. Many other cases occurred after the excessive use of alcohol. After excluding both epileptic and alcoholic cases, however, many instances of amnesia of the type mentioned above remained to be explained. They were considered by many observers to be instances of hysterical amnesia, and this interpretation appears the most probable one, thus bringing such cases under the general group of psychoneuroses of the hysterical type. If this view is held, the amnesia could most readily be explained as a mechanism operating subconsciously, in which the individual escaped from a difficult or intolerable situation by wiping out from memory all circumstances associated with it. It is also probable that many such cases were conscious delinquencies, but the number of the latter type is thought to be comparatively small. All such cases raise medico-legal questions, as the matter of mental responsibility has to be determined.

CONSTITUTIONAL PSYCHOPATHIC STATE

In this group, amounting to 634 cases, were included patients who, while not suffering from frank mental disease, nevertheless were in a mental condition sufficiently abnormal to bring them into serious conflict with those about them. These cases did not differ materially from those seen in civil life, but presented such additional features as might be expected to develop under military régime. Patients of this kind might make fair progress in civil life where they could change occupation and surroundings; but in the military service this was not possible, and they broke down nervously, as a result. Indeed, they frequently suffered from temporary mental disorders. In this group were included some cases of alcoholism and drug addiction in whom such states were considered as symptoms in those constitutionally predisposed.

MENTAL DEFICIENCY

There were admitted 524 cases diagnosed mental defectives. This number is not relatively large, and it is probable that many defectives were eliminated before arrival in the American Expeditionary Forces. The classification of these cases in respect to duty, particularly those with the lesser degrees of

defect, was a question of considerable importance. It was considered that while defectives as a rule could not be used with combat troops, still many of them were serviceable in labor organizations. The disposition, therefore, was to reclassify such cases as were considered fit for duty in rear areas. The record of how these patients had conducted themselves in the military service was considered in conjunction with their mental age as determined by an intelligence test, for the emotional constitution of such patients was of considerable importance. A case with mild defect, if irritable and emotional, was often found unfit, while a case with stable temperament, even with considerable defect, was considered fit for limited service.

In many instances physical defect was found to accompany the mental defect. The physical defect varied in character and degree, in some cases being expressed merely by awkwardness in simple movements, in others making itself manifest by the gross, ungainly physical make-up of the mental defective. In still other cases appeared a constitutional physical defect of ill-defined type. These patients were stooped, had a narrow, ill-developed chest, and often a prominent abdomen. Such cases often complained of numerous neurasthenic symptoms. They were related to constitutional neurasthenic types frequently seen in civil life, with mental deficiency added. It was soon found that it was unwise to return these cases to duty of any kind. They went on sick report or in hospital very frequently and they were more of a liability than an asset.

ORGANIC NERVOUS DISEASES

This organization did not receive cases with lesions of the central or peripheral nervous system resulting from battle casualties, such cases being received by the surgical services of the center. However, the other organic nervous cases, amounting in all to 143, were cared for at this hospital. Peripheral neuritis, occurring after diphtheria, influenza, or other toxic conditions, was frequently encountered. Evidence of syphilis of the central nervous system was found in more cases than might have been expected, considering the average age of the patients. Several cases were diagnosed brain tumor. A number of patients presented mental symptoms or epileptiform seizures subsequent to brain injury. Comparatively few cases of paresis or tabes were observed, although other manifestations of syphilis of the central nervous system were not infrequent.

ENCEPHALITIS OF UNDETERMINED TYPE

During January and February, 1919, a small number of organic cases of unusual interest were admitted to this hospital. The clinical features of those cases were first recognized by the chief of the service at that time. They presented symptoms of such unusual interest that it is thought they should be discussed here, regardless of the fact that the clinical observations could not be completed. The following observations, made by the chief of service, are given as nearly as possible in conformity with his characterization of them. In all, there were about one dozen cases of this particular group.

The most striking feature of these cases was that they bore a rather close resemblance to paralysis agitans. They showed a stolid mask-like expression, a tremor of the head and hands suggestive of paralysis agitans, although differing somewhat from it, a shuffling gait, and a rigid posture, which suggested rigidity of the muscles of the neck and trunk. These cases also appeared dull mentally, but this was more in appearance because of their lack of expression than in reality. There was no actual paralysis of the facial muscles, merely a lack of mobility and of expression. One patient could smile but very slightly, and could not laugh. Another had noticed by looking in the mirror that his expression had changed. The head and neck in these cases were held in a stiff and rigid position, but little, if any, true rigidity was found. The arms were held in a semiflexure both when the patient was walking and sitting. Here, too, however, there was not actual rigidity. The tremor was of a rather coarse type. The hand, as a rule, was held partly closed, but a pill-rolling motion was not observed. As a rule, both sides were involved, but one more than the other. The gait was shuffling and awkward; in fact, all movements were slowly and awkwardly performed. The gait suggested paralysis agitans but was not entirely characteristic of that disease.

Physical signs indicating disease of the central nervous system, except those described above, were not marked. One case showed a remarkable lateral and rotary nystagmus with exceptionally wide excursions. Otherwise the eye symptoms were negative. There was no actual paralysis of facial muscles. One patient showed considerable tremor of the lips which made it appear that he was about to weep; however, there was no emotional instability. The deep reflexes showed nothing remarkable except in some instances the knee-jerks were very active. There were no sensory disorders and no Babinski or ankle clonus. The superficial reflexes were normal. There was no actual motor weakness, but motor functions were performed awkwardly. The liver showed no evidence of disorder, and other physical findings were negative. Unfortunately, complete serological examinations were impossible. Spinal punctures were done in a few cases. No increase of cells or globulin was found, but as the punctures were done late in the disease nothing definite could be inferred from these negative findings.

While these cases had a fairly close resemblance to each other, sufficient to place them in one group, they did not have that close resemblance throughout which is found in most cases of paralysis agitans. In some the tremor of the hands was the most marked symptom; in others, the gait; and in others the lack of facial expression or the rigid posture. All had to a certain extent some of the symptoms enumerated above. Paralysis agitans is mentioned in connection with these cases for descriptive purposes only, not that they were thought to have any true relationship with that disease. The condition was thought to be encephalitis of unknown origin, the toxic agent showing a selective action, probably for the lenticular nucleus. No etiology could be established. Some cases had had a febrile reaction before admission and had been diagnosed influenza; one occurred after mumps, one after an infection of the antrum and ethmoid sinuses. Others gave no history of any acute illness. Some of the cases had been confused and delirious at the outset of their illness, previous to

their admission here. In favor of interpreting these cases as encephalitis of selective type is the fact that a number of other cases were admitted about this time in which the cranial nerve nuclei of the brain stem were involved. One such case showed, first, involvement of the seventh nerve on one side; a few days later the other side was involved. Both gradually improved and then a slight ptosis of both sides was observed. Later the sixth nerve on one side showed slight involvement and there was also mental dullness during this period. All serological and physical findings were negative in this case. Other similar cases were observed during this time. Both French and British writers described a condition which they termed lethargic encephalitis. This condition may have had some relationship to the cases of encephalitis observed here. Cases seen here, however, were not particularly dull or lethargic and although ptosis occurred, it was not as constant as that observed by the French and British writers.

BASE SECTION NO. 5

As has been mentioned elsewhere, the hospital center at Kerhuon, Brest, was called upon for many kinds of neuropsychiatric service, especially for those who, after being sent from Savenay in expectation of their prompt return to the United States, had to wait for weeks and even months before they could go any farther.⁵ This was facilitated in a measure by the fact that large convoys of such mental patients usually had with them medical officers and enlisted men who had had special training in the care and treatment of mental disorders. Ultimately four wards were set aside as a neuropsychiatric section for the Kerhuon hospital center. These wards with a total capacity of 200 beds were located in an attractive area at the south end of the hospital reservation overlooking the bay. The American Red Cross provided two additional barracks, one for recreation, one for occupational therapy, and also a veranda overlooking the harbor. With the closing of Base Hospital No. 214, June 21, 1919, this department became the only neuropsychiatric hospital functioning in France. It then began to receive patients from all of the areas in France in which American troops were still to be found and from the Army of Occupation until a separate line of evacuation for these patients had been provided through Holland. By July, 1919, but very few patients were coming in, the last group being a number of prisoners, who had been found by the psychiatric survey of the prison camps at Gievres to be suffering from mental disorders. When this hospital ceased to function, its remaining patients were evacuated to an annex of Camp Hospital No. 33, which was the last neuropsychiatric unit to render any special service in France.⁶

REFERENCES

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- (2) History of Base Hospital No. 117, A. E. F., by the commanding officer of that hospital. On file, Historical Division, S. G. O.
- (3) Letter from the senior consultant, neuropsychiatry, A. E. F., to the chief surgeon, A. E. F., February 17, 1918. Subject: Personnel of Base Hospital No. 117. Copy on file, Historical Division, S. G. O.
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- (5) Report of Medical Department activities, Base Section No. 5, A. E. F., undated, compiled under the direction of the base surgeon from official records in his office. On file, Historical Division, S. G. O.
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CHAPTER VII

IN THE ARMY OF OCCUPATION ^a

Provisions were made at the very outset for a highly organized medical service of the army of occupation. In so far as the neuropsychiatric service is concerned, the division psychiatrist of the 42d Division, who had been consultant in neuropsychiatry for the First Corps, was assigned to duty as consultant in neuropsychiatry for the new army. Each division was already provided with a divisional psychiatrist. In some cases these officers joined their divisions at the time of the organization of the Third Army, others had served with their divisions during the period of active hostilities, were thoroughly familiar with their duties, understood conditions of actual warfare, and had established themselves in the esteem and respect of their officers and associates.

The officers and men of the Third Army had just come from the severest kind of fighting. Many of them were suffering (without fully appreciating it) from the effects of fatigue and prolonged emotional excitement. Their new duties were to be of a type decidedly different from their recent ones in active warfare; and although it was considered by every soldier an honor to become a unit in the army of occupation, there was, nevertheless, not a little feeling of envy and regret as they reflected that long after other divisions would have returned to their homes those constituting the Third Army would remain on duty on foreign soil. Favorable as living conditions were when compared with those in the field, still, new adaptations would be required, some of which might be rather difficult. In other respects the army of occupation constituted a miniature American Expeditionary Force and many of its medical problems were similar to those of the larger American Expeditionary Forces during the latter part of 1917 and the early months of 1918.

Under these conditions it was deemed wise to organize a neuropsychiatric service in the Third Army, at the earliest possible moment, capable of giving immediate and efficient treatment to officers and men suffering from mental and nervous disorders, of furnishing the divisions with a medical service for diagnosing and eliminating men likely to become useless for military service, and of providing adequate care for the evacuation to the United States of men not likely to be returned to duty after a period of hospital treatment. A hospital service of specialists was to be established in order to be prepared to meet these problems as they arose.

The task of organizing a neuropsychiatric service in the Third Army was assigned to the senior consultant in neuropsychiatry by the chief surgeon of the army. Certain officers, experienced in dealing with neuropsychiatric problems, were ordered to report for duty in the Third Army. With this personnel the consultant in neuropsychiatry for the Third Army organized his special service.

^a The statements of fact appearing herein are based on a report of the activities of the neuropsychiatric service, Third Army, made by Maj. S. W. Hamilton, M. C., consultant in neuropsychiatry, Third Army. On file, Historical Division, S. G. O.

NEUROPSYCHIATRIC ORGANIZATIONS IN GERMANY

During the period of advance into German territory only the field hospitals were available for the care of the sick. These hospitals evacuated their cases largely to Commercey, where there were two base hospitals (one with a neuropsychiatric ward), and to Souilly, where three evacuation hospitals still remained. Division psychiatrists examined patients coming under their observation during this period, but the number was very small. As soon as the troops arrived in the areas which they were to occupy psychiatric clinics were established at Coblenz and Trier. These were known, respectively, as Neuropsychiatric Unit No. 1, Evacuation Hospital No. 14, at Coblenz, and Neuropsychiatric Unit No. 12, at Trier. At Coblenz a fine private hospital conducted by a male religious order had the best available facilities for such a service and was requisitioned by the army. Although this building constituted a separate unit physically, it was attached administratively to Evacuation Hospital No. 14 and later to Evacuation Hospital No. 16. That part of it devoted to the care of mental and nervous patients was known as Neuropsychiatric Unit No. 1. It was opened on December 26, 1918. The building was an excellent three-story and basement structure of brick and stone about 20 years old but in a fine state of repair. The rooms and wards varied in capacity from 2 to 12 beds, making proper classification of patients easy. The special equipment of the hospital included a good hydrotherapeutic plant, a fair Zander installation for mechanotherapy, and a gymnasium which was converted into an excellent shop for occupational therapy. The hospital building, in addition to the psychiatric service, conducted a general medical service. Sometimes the admissions were so numerous that the neuropsychiatric patients overflowed into the general medical wards.

The buildings of Neuropsychiatric Unit No. 2 were barracks with a capacity of 1,500 which had been used previously by the Germans for hospital purposes. The neuropsychiatric service opened on the third floor of Building V, December 24, 1918. On January 22, the service was moved to Building III where special preparations had been made for the reception of nervous and mental cases. The first floor was used for neurological cases and the milder mental disorders. Quarters for the more serious psychoses were on the second floor. There were 57 beds and the construction of the building was such that the proper classification of cases was an easy matter. A room was set apart for hydrotherapy. This center received all neurological and mental cases originating in the military area around Treves. Early in April, 1919, it began to receive patients from the organizations farther south in the Luxembourg district, which formerly had evacuated their cases of mental and nervous diseases to our hospitals in France. Patients were received also by transfer from the more congested service established in Evacuation Hospital No. 14 (later Evacuation Hospital No. 16) at Coblenz.

With 40 beds at Coblenz and 57 at Trier, the army of occupation had facilities for the reception, observation, and treatment of neuropsychiatric patients in the proportion of about 1 bed to 2,500 enlisted strength. In an American city approximately 60 per cent of the total population are adults. Not only was the proportion of beds available for neuropsychiatric patients

in the army of occupation greater than that which was provided at that time in the most advanced communities at home, but the personnel, medical officers, nurses, reconstruction aides, and enlisted men were very much above the average.

The neuropsychiatric unit at Evacuation Hospital No. 12, at Trier, received 249 patients during the period between December 24, 1918, and April 22, 1919, or about 4 per cent of the total number of admissions to this hospital. Of this number, 198 had mental disorders or were admitted for mental observation, and 51 showed symptoms of a neurological nature. One hundred and eighty-three patients, or 77 per cent of the total, were evacuated to base hospitals in France, and 37, or 16 per cent, were returned to duty. There were two deaths. The mental cases received included a comparatively small number of severe psychoses. The greater number had less serious mental disorders. The majority were cases of psychoneurosis. A systematic effort to eliminate mental defectives from the divisions constituting the army of occupation led also to the admission of a considerable number of such cases.

The operations of the neuropsychiatric service at Coblenz were more active than those of the above unit, since the hospital was more conveniently placed as far as transportation was concerned.

During the winter, the hospital services were very busy; in March a decline in admission rate began. The following table shows the number of patients received in both centers from December, 1918, to June, 1919, inclusive:

	Decem- ber	January	Febru- ary	March	April	May	June	Total
Psychopathic cases:								
Coblenz.....	24	106	174	201	159	115	73	852
Trier.....	16	50	34	21	21	23	9	170
	36	156	208	222	180	138	82	1,022
Neurological cases:								
Coblenz.....	11	31	39	35	24	24	9	173
Trier.....	1	26	21	14	19	7	3	91
	12	57	60	49	43	31	12	264

These cases were grouped with respect to diagnosis as follows:

Psychiatric:

Defect and psychopathy.....	376
Psychoneurosis.....	263
Psychosis.....	190
Epilepsy.....	65
Alcoholism and drug states.....	69
Miscellaneous mental problems.....	59

1,022

Neurological:

Cerebrospinal syphilis (excluding dementia paralytica).....	23
Paralysis.....	33
Neuritis.....	38
Neuralgia.....	27
Brain tumor.....	4
Miscellaneous problems of neurology and internal medicine.....	139

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A few points concerning the mental group are noteworthy. The misfits—defectives and psychopaths—came to the hospitals in highest proportion in February and March. This was due to the attempted elimination of all but class A men from the army. Had not many been evacuated through other than hospital channels (replacement depots) the figures would be even higher. Most epileptics appeared in January and March. Psychoses almost held their incidence, and alcoholic states increased. Syphilis furnished 2.2 per cent of all our cases.

	Decem- ber	January	February	March	April	May	June
Defect and psychopathy.....	7	54	113	81	68	40	13
Epilepsy.....	4	17	7	18	10	7	2
Psychosis.....	13	23	28	35	30	28	27
Alcoholism and drug states.....	2	6	16	9	8	13	15

From the beginning it was the aim of officers in charge of these neuropsychiatric centers to have them serve as more than mere reception and clearing houses. Every effort was made to employ the therapeutic measures available in the best conducted hospitals in the United States. For the treatment of neurological patients, massage, baths, electrical and Zander apparatus were available. For mental cases, reliance was placed first upon individual treatment by the trained medical and nursing personnel. In the Coblenz center, there were 18 and in the Trier center 6 enlisted men who either had had nursing experience in State hospitals at home for several years or else had received previous training in the Army and were selected because of their special qualifications. Likewise, the nurses were chosen with reference to their previous experience and personal qualifications. Much use was made of the hydrotherapeutic apparatus at the hospital at Coblenz and at Trier; a special bathtub was always available for excited or agitated patients. Excellent laboratory facilities were available and in constant use.

A development of special importance both at Coblenz and at Trier was occupational therapy. This was started at Neuropsychiatric Unit No. 1, in a small room, by the commanding officer, with the aid of one enlisted man. A few weeks later three reconstruction aides who had been sent to the American Expeditionary Forces for work with neuropsychiatric patients were on duty at each center. Shops were finally established in commodious quarters and during working hours a very large proportion of the patients under treatment were assigned there. For patients who were physically infirm, or who were in an uncertain mental state, and so unable to go to the shop, occupational work was provided in the ward, and if necessary at the bedside of the patient. Valuable assistance was given by the orthopedic department in getting supplies for the occupational therapy department. Work with wood, brass, and copper was provided and all sorts of interesting and useful things were made. Other materials were used, for example, rings were made from silver, bags from leather or beadwork. Likewise, drawing and painting, braiding, and similar crafts were taught.

The dissolution of the Third Army on July 2, 1919, found the number of troops in Germany already much decreased. Further embarkations of troops

going home occurred at frequent intervals. On July 15, Neuropsychiatric Unit No. 2, at Trier, was closed; Neuropsychiatric Unit No. 1, at Coblenz, was transferred to Evacuation Hospital No. 49 temporarily. On July 28, Neuropsychiatric Unit No. 1 was moved to its permanent quarters in what had been the garrison hospital of Coblenz but which was then Evacuation Hospital No. 27. The service was located in a building equipped with excellent hydrotherapeutic and electrotherapeutic installations. Some confusion was caused by the fact that all the trained enlisted men were released shortly afterwards, before recruits could be placed under training. In consequence the neuropsychiatric medical officers for a time were handicapped in their work.

ACTIVITIES IN ARMY, CORPS AND DIVISIONS

With the cessation of hostilities, new problems replaced those of controlling war neuroses; for example, medico-legal activities now became, in a large way, a psychiatric problem. Many men had been placed under arrest during the few months preceding the armistice, charged with different types of military offenses, but had not been brought to trial during active operations. In consequence the judge advocate's department was exceedingly busy during the early part of the period of occupation in disposing of these men. In some divisions it was the custom of the judge advocate to request a mental examination of prisoners accused of any serious crime. In others, such an examination was requested only if circumstances connected with the offense, or a rough estimate of the mentality of the prisoner, indicated the possible presence of an abnormal mental condition. In still other divisions, such examinations were not employed unless mental unsoundness had been definitely advanced in defense of the prisoner.

On January 11, 1919, an order was issued by general headquarters, Third Army, for the appointment of boards in all organizations of that army to pass upon and eliminate all soldiers physically or mentally unfit. Division psychiatrists were made members of such boards. Patients from organizations other than divisions were referred to the army consultant, if of neurological or psychiatric importance. The policy of the different divisions as to the elimination of men differed somewhat. A division soon to return to the United States referred fewer of its personnel than a division which had to remain in Germany for several months. Cases so referred were considered by the division psychiatrists and their opinions of men alleged to be mentally unfit were seldom challenged. In most cases the recommendations were for the evacuation of men found to be mentally defective, of marked psychopathic tendencies, or suffering from psychotic or psychoneurotic reactions. Such men were transferred to the neuropsychiatric centers at Coblenz and Trier and thence to base hospitals in France. This process was not intended to obstruct the evacuation of neuropsychiatric cases through hospital channels and did not.

CLINICAL OBSERVATIONS

The following table gives an idea of the distribution of diseases among the 1,286 patients received at the centers at Coblenz and Trier:

Psychopathic cases:	
Mental deficiency and psychoses	566
Psychoneuroses	263
Epilepsy	65
Alcoholism and drug addiction	69
Psychiatric conditions not involving definite disorders	59
Total	1,022
Neurological cases:	
Cerebrospinal syphilis (exclusive of general paresis)	25
Paralysis	33
Neuritis	38
Neuralgia	27
Brain tumor	4
Miscellaneous neurological and internal medical conditions	139
Total	264

The largest proportion of patients with mental deficiency and constitutional psychopathic states came to the hospital in February and March due to the efforts to eliminate unsuitable men referred to above. Had many of these men not been evacuated through other channels the admissions at Coblenz and Trier would have been considerably higher. It is noteworthy that during a period of seven months a military population which averaged approximately 200,000 officers and men contributed 5 psychopathic patients and 1.5 neurological patients per 1,000 strength.

The results obtained with many of the cases treated were excellent. Although the number returned to duty was small this is because it seemed expedient, even after recovery, especially in the case of the lighter depressions, not to return a soldier to duty again. Such cases were almost invariably sent to France to be returned to the United States. In many cases the course of the disease was very favorably influenced by the possibility of early treatment. It is doubtful whether mental cases which occurred in any similar population have ever been received so quickly and with so little legal or administrative formality as they were in these neuropsychiatric units of the army of occupation.

The number of suicides that occurred in the army of occupation was very small. Not one of these suicides occurred in a patient who was under observation for mental disorders or in the wards at neuropsychiatric centers. This result is significant, because of the fact that at all times among these patients and in the wards states of depression were more frequently seen than any other psychotic manifestations.

CHAPTER VIII

STUDY OF CASE HISTORIES OF A TYPICAL GROUP OF WAR NEUROSES

The study to be presented here arose originally as somewhat of a military necessity in the American Expeditionary Forces. As Base Hospital No. 117 was the principal center for training neuropsychiatric personnel for the care of war neurosis cases, there were constantly passing through the hospital scores of medical officers sent there for instruction.¹ A scientific summary of the clinical material there consequently was considered helpful in giving to these student officers a more concrete understanding of the war neurosis problem than otherwise would have been possible. The material presented here is the result of an inquiry made in France into the make-up of the patients at Base Hospital No. 117, amplified by later studies carried on in the United States in 1919 and 1924. It is a description of the characteristics—physical and mental, military, and social—of men in the American Expeditionary Forces who developed neurosis and were sent to the only special base hospital in France for the treatment of war neuroses. The original tabulation was done over a period of several months by a group of well-educated patients under the supervision of the writer; and later repeated by the writer in The Adjutant General's Office. The cases considered herein include, of course, only cases diagnosed as psychoneurosis.

MENTAL AND PHYSICAL MAKE-UP

THE AGES FOR THIS GROUP COMPARED WITH THOSE FOR THE ARMY AT LARGE

Whether or not the factor of age is significant in the development of war neurosis may be discovered by comparing the ages of the patients of Base Hospital No. 117 (taken at the time of hospitalization) with the distribution of ages in the Army at large. From the records of the War Risk Insurance Bureau it was possible to tabulate the ages of 3,683,134 soldiers (officers and men), and these serve as a basis for comparison. In interpreting the comparison between the figures for Base Hospital No. 117 and those for the Army at large it should be stated here that the latter ages were obtained from insurance policies taken out shortly after the soldiers' arrival in camp. Ayres² estimated that during the World War the average American soldier spent from eight to nine months after the time of his entering camp before he reached the front; this means that the ages of the men as given on their insurance policies would all have increased by eight months or more by the time they reached Base Hospital No. 117. With this in mind the table following was prepared.

TABLE 1.—*Comparison of ages of patients of Base Hospital No. 117 with ages furnished by 3,683,124 applicants for war risk insurance on basis of incidence of each age per 2,653 (the number of psychoneurosis cases on whom ages were obtained)^a*

Age	Army at large	Base Hospital No. 117	Age	Army at large	Base Hospital No. 117
16	1	2	35	10	15
17	9	7	36	9	12
18	46	34	37	7	8
19	89	127	38	7	9
20	111	152	39	6	4
21	210	164	40	5	8
22	364	307	41	4	5
23	315	334	42	3	4
24	274	302	43	3	4
25	234	227	44	2	3
26	204	224	45	2	7
27	160	140	46	2	1
28	154	141	47	1	2
29	135	110	48	1	2
30	125	104	49	1	0
31	91	79	50 and over	4	5
32	36	58	Medians	24.664	24.662
33	15	33	Q	2.315	2.315
34	13	19			

^a Throughout the following discussion the figures obtained from the War Risk Insurance Bureau will be converted into numbers per 2,653, in order to facilitate comparison with the figures for Base Hospital No. 117.

The median for the ages of the Army at large is 24.664 years, for the ages at Base Hospital No. 117, 24.662 years. Though the medians of the two groups are practically identical, the median for the Base Hospital No. 117 group is in reality about eight or nine months less than that for the Army at large, for the reason given above, namely, that the ages for the Base Hospital No. 117 group were taken approximately this length of time later in the soldiers' careers than were the Army at large ages.

In comparing the number of admissions under 21 years of age with the Army at large figures for the same ages, we find for the Army at large (soldiers under 21 years), 256; for Base Hospital No. 117 (patients under 21 years), 322.

Again we must consider when the data were obtained in each group and allow for the eight or nine months' difference in the dates when the two sets of ages were taken. The Army at large figures as they stand are too large for this group, since approximately two-thirds of the men recorded at age 20 would by the time of hospitalization have passed into the 21-year-old group. One hundred and eleven such men (per 2,653) were 20 years old. When two-thirds of this number is transferred over to 21 years, it leaves the relative numbers as: Army at large (soldiers under 21 years), 182; Base Hospital No. 117 (patients under 21 years), 322.

These figures reveal a marked disproportion between the admissions to the hospital of men under 21 and their number in the Army at large, 77 per cent more men from this group being admitted to the hospital than their proportion in the Army would lead us to expect. That is, there was a marked tendency for men under 21 to develop neurosis in greater numbers than their proportion in the Army would warrant.

The usual upper age-limit for Army original enlistment is 35 years. This implies a decrease in the desirability for Army service of men above that age.

Comparison of the two groups for the ages above 35 gives the following figures: Army at large (soldiers over 35 years), 67; Base Hospital No. 117 (patients over 35 years), 89.

The total for the Army at large group, at 34 years of age, is 13. Two-thirds of 13 must be added to the figures given above to make them comparable with those of Base Hospital No. 117, because of the eight months' difference in the time of taking ages. Allowing for this discrepancy, we must add 8 to the 67, making a total of 75. Including this allowance, there are 19 per cent more patients at these ages than the expectation in the Army at large. This difference is significant enough to warrant a second, though less marked conclusion, i. e., that men over 35 had a somewhat greater proportional liability to develop war neuroses than the numbers of those ages in the Army at large would warrant.

FAMILY AND PERSONAL HISTORY

The question of the significance of the place of lessened resistance in the individual's nervous system is perhaps the most significant problem for statistical study in connection with the nature and etiology of war neurosis. There has been a widespread tendency to imply nervous or biological inferiority in the war neurotic. By this is meant that in the past life of the individual there had been some incident or some condition in which the neurosis was latent, that the war merely revived an old or innate weakness. It was assumed that the pathological factors in the individual's make-up had been manifested earlier by such incidents as nervous breakdown, chorea, tics, and speech disorders. Also, in addition to previous personal weakness, nervous inferiority includes familial defect in the form of direct or collateral expressions of serious nervous disorders. Yet the following references illustrate the existence of a diversity of opinion regarding the relationship of neuropathic taint to the occurrence of war neuroses.

Mott,³ quite early in his experience, found that in the majority of instances of war neuroses the subject had an inborn or acquired disposition to emotivity. The same conclusion, he says, was arrived at by eminent French and German authorities. Yet later in the same discussion Mott stated that shock—not only commotional but emotional shock—due to terrifying or horrifying conditions of war, might induce hysterical manifestations in a neuropotentially sound individual, in fact, in a soldier who by his record had shown that he was neither of a timid disposition nor had any neuropathic tendency. Wolfsohn⁴ studied 100 of Mott's cases and found in 74 per cent a positive family history and in 72 per cent a positive personal history. Whereas Hurst⁵ believed the war neuroses might develop in anyone, Babinski, limited liability to the super-suggestible. Pollock,⁶ in a study of 200 cases, found positive family history in 4 per cent, positive personal history in 23 per cent, mental deficiency in 1 per cent. Salmon⁷ held that the constitutional neurotics constituted a large proportion of all cases; however, the number of men of apparently normal make-up who developed war neuroses was very striking. Rhein,⁸ studying incipient cases in a forward area hospital, found that of 342 cases studied 195 had negative family history and 137, positive; of 320 cases studied by him for personal history, 174 were negative and 146 positive. He explained his large

negative findings by saying that in the active war areas one acquired in a short time a state of nervous instability which in civil life would require months or years to bring about. The shortened period in the genesis of general paresis in soldiers at the front is a similar fact; Weygandt⁹ suggested a similar foreshortening for dementia præcox. According to Schwab,¹⁰ the percentage of neuropathy never appeared to be greater than 5 per cent. Viets¹¹ held that the neuroses all had a history of more or less psychopathic disposition before the war. Kiely,¹² studying 500 cases at a base hospital in the American Expeditionary Forces, found 34 per cent with positive family, 42 per cent with positive personal history. Careful inquiries into the family histories of all people, healthy as well as sick, have shown that the preponderance of such heredity for the mass of neuroses and psychoses is but a trifle more than that for healthy individuals.

The supposition that a pathological nervous incident in the life of an individual may come to light under the stress of war conditions is unquestionably true. There were many cases at Base Hospital No. 117 in which some old symptom had returned, the recurrence being usually in exaggerated form. A man who had stammered a bit in his youth entered the hospital mute or aphonic; ties or choreiform movements of childhood reawakened as generalized coarse tremors. In what might be called the sphere of subjective symptoms, phobias, worries, suspiciousness, to say nothing of those symptoms related to conditions falling under the head of constitutional psychopathic states, this same exaggeration occurred. There were several cases of men who had been previously of a slightly suspicious make-up who showed upon admission to the hospital distinctly paranoïa symptoms, these usually following upon some severe fatigue. Likewise, in many of the psychasthenies an old fear of the dark, horror for high places, self-doubtings, or other similar conditions, were greatly magnified. Several interesting cases in which there had been in childhood or throughout the previous life of the individual an obsessive fear of the dark were carefully observed. These patients entered the hospital, after evacuation from the front, in a state of terror, not only of the dark, but also of the day, and especially of being alone at any time. They were often afraid to leave the ward, and generally would venture but a short distance from the hospital alone. If they had to go anywhere at night they would wait until someone came along who was going in the same direction.

In discussing the casual significance of neuropathic taint, it is pertinent to compare our findings with the proportion of familial and personal taint in the average regiment that went overseas and saw service at the front. Bowman,¹³ described the testing of a regiment at one of the cantonments in the United States in which he found that 45.59 per cent of the men gave positive findings; 38.43 per cent were themselves neuropathic, and positive family histories were noted in 9.84 per cent of his cases. Only 2.2 per cent of these men were recommended for discharge; ^b the rest probably went to France.

Undoubtedly the attitude of the men in camp in the United States toward answering many personal questions was different from that of patients at the

^b Bowman in a personal communication added: "It is also perhaps well to note 24 cases who were picked out from preliminary examination for further study were not studied because of transfer to other organizations, and the actual number recommended for discharge probably would have been higher if these cases could have been studied."

war neurosis hospital in France. Men who were eager to cross the ocean and see action were quite loath to give information which was likely to jeopardize their chances of going overseas. But how different the attitude toward disclosing family and personal neuropathy among men who had been through several campaigns, and had been blown up or concussed, and were in a hospital suffering from troubles which, to say the least, were mysterious to them. Then again, the necessarily hasty mental examinations which were made in the cantonments in the United States could not be compared in acuity with the study which the ward surgeons put in upon their cases in the hospital service in France. Bowman's figures suggest, however, that probably in all regiments there were nearly 50 per cent of the men whose clinical histories if taken would show the presence of neuropathic taint either in their families or in themselves.

The staff physicians at Base Hospital No. 117 made inquiry regarding each patient's personal and family history. The figures used here regarding personal and family history are taken from their accounts of psychoneuroses cases assigned to their wards. Cases which were written up hastily or superficially by officers on temporary duty were excluded from consideration. As the patients were assigned to the various wards by chance this sampling is a fair one.

The data on family and personal history are summarized under two headings: Positive and negative. In considering family history, *positive* includes cases in which the family history showed that either the parents or near relatives were actually committed to institutions for the insane or suffered from symptoms which the ward surgeon could readily recognize as psychotic or neuropathic. *Positive* included also frequent occurrence in the patient's family of gross medical difficulties, such as tuberculosis, heart trouble, and the like. *Negative* indicates an absence of insanity or excessive disease in the family.

In taking account of the personal history of the patient, the same two categories were used: Under *positive* were included numerous types of difficulties—psychoses, psychopathic personality, alcoholism, mental deficiency, premature organic troubles of the heart, lungs, etc., severe neurasthenias, speech defects and hypochondriachal disorders of long standing, neuroticism, timorousness, excitability, effeminacy, temperamentality, and sex and other anxieties. Under *negative* were cases in which no evidence of such abnormality could be discovered in the previous personal history of the patient.

Data were obtained from approximately 1,000 case histories. The discrepancy in numbers is due to incompleteness in some of the case histories. The following tabulation summarizes the findings:

FAMILY HISTORY		Per cent
Positive.....	508	50. 15
Negative.....	505	49. 85
PERSONAL HISTORY		
Positive.....	527	51. 93
Negative.....	488	48. 07
COMBINED: PERSONAL AND FAMILY HISTORY		
Positive.....	643	63. 48
Negative.....	370	36. 52

By comparison with Bowman's figures of 45.59 per cent positive findings for combined personal and family history in a "normal" regiment, the members of which had previously, when recruited, been given a medical examination, and of which only a small number were discharged from the service, one finds that the supposition of an overwhelming probability of previous neuropathic taint in the war neurosis victim does not hold true for the patients of Base Hospital No. 117. There is no gainsaying that the war neurosis tended to include symptoms which had occurred in the individual's past life, and, similarly, to strike any latent weakness with telling force; but to go further and define the causation and occurrence of war neuroses in terms of these mental or nervous weak spots would be taking an extreme view, and one scarcely warranted by the fact that more than one-third of the number of cases studied in this group gave no evidence of such neuropathic background.

PHYSICAL STIGMATA

It is a traditional habit to connect psychoneurosis with the so-called physical stigmata. Jones, for instance, writing of war neuroses, said:¹⁴

The type known to neurologists as "degenerate," which contains many epileptics in its ranks, with the physical characteristics of narrow palate and crowded teeth, simian hand and coarse skin, has been found frequently among these patients; I have come to regard a narrow palate as indicating a bad prognosis.

There were few notations of physical stigmata on the case histories of patients at Base Hospital No. 117; less than one-half of 1 per cent. Anomalies of growth, such as marked facial asymmetry, Hutchinson teeth, feminine type of breast and pubic hair distribution, did occur, but these were rare in view of the total number of cases admitted.

WOUNDS

The number of men admitted to the hospital who had been wounded or injured was very small. There were some few cases of traumatic hysteria developing upon an injury suffered from an accident with horses, mules, or camions. The total number of patients admitted who had been seriously wounded was 18, or less than 1 per cent; slightly wounded, 187, or 7 per cent. These cases had recovered from their wounds at the time of hospitalization in Base Hospital No. 117. Kiely,¹² studying 500 cases, found only 6 per cent who had been wounded at all—only 1 or 2 of these being wounded about the head. These facts bear out the usual theory that the soldier who is taken prisoner or physically wounded rarely develops a neurosis.

EFFECTS OF GASSING

It was difficult to differentiate cases in which gassing had been present and those in which it was assumed or imagined. If questioned, most of the men would remember having been exposed to poisonous gas at one time or another. There were 148 cases, or 5.51 per cent, in which the history of gas injury was noted by the ward surgeon in his summary, the scar of the burn often bearing out the man's assertion.

DRUG ADDICTION

Of all the admissions to the hospital there were only three individuals who gave evidence of being drug users. These were in no sense pronounced cases. The cases of psychoses of this sort in the American Expeditionary Forces were not many and when they occurred they were sent to hospitals handling mental cases. The relationship of drug addiction to the etiology of war neurosis, if present, is very insignificant.

ALCOHOLISM

Opinion varies regarding the significance of alcohol in the etiology of war neuroses. Canadian authorities believed an alcoholic 35 years or older a sure candidate for war neurosis. Kiely,¹² in his study of 500 cases, found 4 per cent alcoholics. Lépine,¹⁵ on the basis of 6,000 cases observed, claimed that alcohol was the primary and sole cause in one-third of his cases, and that more than half, perhaps two-thirds, were influenced by it. He likened it to malarial disease in the pathology of certain countries. Read,¹⁶ on the contrary, was emphatic in his denial of the significance of alcohol as anything but contributory in the causation of war neurosis.

One of the most interesting cases of complete amnesia seen by the writer began to clear up under alcohol. The patient returned to the hospital, after imbibing freely, very much excited over some visual images related to his lost memories which were passing before him. In a short time, by simple association means, a good part of this man's memory returned.

The statistics of the cases at Base Hospital No. 117, regarding the use of alcohol, as elicited by the ward surgeons in their clinical histories, were the following: Negative—ranks from abstainer and moderate drinker to those who had been intoxicated once or twice in their lives, 2,295, or 92.73 per cent. Positive—men who gave a history of frequent alcoholic dissipation, including "demonstrations" during their hospitalization, 180, or 7.27 per cent.

Inasmuch as these figures were obtained from the men's replies to questions the ward surgeons asked them, undoubtedly there may have been some misrepresentations. However, observation of the men's behavior in nearby towns and about the grounds of the hospital showed that there were few among the group that tended to alcoholism. Furthermore, the inability of the men at the front to obtain alcoholic beverages in large amounts, practically eliminates alcohol as an important etiologic factor in war neurosis in the American Expeditionary Forces. Its part as a contributory factor, however, is difficult to determine.

SOCIAL AND ECONOMIC STATUS

BIRTHPLACE

The cosmopolitan origin of the American Expeditionary Forces is interestingly brought out by inspection of the birthplaces of the patients in Base Hospital No. 117. Sixty-four were born in Italy, 49 in Russia, 19 in Ireland, 15 in Poland, and 14 each in Canada and England. Besides representatives from European countries other than those cited, Cuba, Switzerland, Armenia, South Africa, Brazil, and the "high seas" were represented. The following

tabulation contains the figures for the various countries from which the foreign-born psychoneurosis patients of the hospital came:

Albania.....	2	Finland.....	4	Rumania.....	5
Argentina.....	1	France.....	2	Russia.....	49
Armenia.....	2	Germany.....	4	Scotland.....	6
Austria.....	7	Greece.....	10	Serbia.....	2
Belgium.....	3	Holland.....	1	South Africa.....	1
Bohemia.....	1	Hungary.....	1	Sweden.....	2
Brazil.....	1	Ireland.....	19	Switzerland.....	2
Canada.....	14	Italy.....	64	Turkey.....	1
Cuba.....	3	Lithuania.....	2	Wales.....	1
Denmark.....	2	Norway.....	7	High seas.....	1
England.....	14	Poland.....	15		

In view of the great amount of moving from State to State the figures for the birthplace of the men are less significant than those for home addresses in drawing inferences regarding the social background of the war neurotic group.

STATE OF RESIDENCE AND OCCUPATIONAL ENVIRONMENT

The States which the enlisted men who were patients of Base Hospital No. 117 gave as their homes were compared with the percentages of enlistments in the Army as a whole coming from the same States. It must be remembered in interpreting such a comparison that a determining factor in the incidence of psychoneurosis in various divisions of the Army is the severity and duration of the campaigns in which the troops in question were used. There is, of course, no assurance that soldiers from the various States were subjected to similar severity of military stress. Yet the coefficient of correlation by the rank method^c between the percentage of Base Hospital No. 117 patients from each State and the percentage of the total Army enlistments by States is plus 0.841 (P. E. +0.0297). This correlation would indicate that from the standpoint of proportionate representation from the States our selection of cases is in general tendency adequately representative of the constitution of the Army as a whole.

Significant interpretations regarding the types of localities from which these men came are obtained from the consideration of the percentage of urban and rural residents, density of population, percentage of foreign born, and number of males 10 years of age and over engaged in agricultural work in the various States. Tables 2 to 5 give the results of this tabulation. When either the 10 highest ranks are compared with the 10 lowest (by the addition of the percentages) or the 24 highest with the 24 lowest for the above-mentioned four considerations, the data are all similar in tendency. The States in which there were the highest percentages of native stock, of rural residents and of agricultural workers, and the least density of population, gave much smaller quotas of psychoneurosis patients than did the States high in density of population, urban residents, foreign born, and nonagricultural workers.

Or viewed from another angle, these facts are further defined by the coefficient of correlation by the rank method between Base Hospital No. 117 percentages ranked for the four qualities under study and the rank order of percentage of enlistment in the total Army. Rho is positive for density of popu-

^c Calculation with Spearman's formula: $Rho = 1 - \frac{6\sum d^2}{N(N^2 - 1)}$ and the P. E. = $0.7063 \frac{1 - Rho^2}{\sqrt{n}}$.

lation (plus 0.609, P. E. ± 0.123), for percentage of urban residents (plus 0.464, P. E. ± 0.079), for percentage of foreign born (plus 0.104, P. E. ± 0.090), and negative for percentage of males 10 years and over engaged in agricultural work (minus 0.507, P. E. ± 0.072).

TABLE 2.—Rank order of States from the standpoint of percentage of urban residents^d related to percentages of the total Army enlistments and of Base Hospital No. 117 patients from those States

Rank	State	Per cent B. H. No. 117	Per cent of Army	Rank	State	Per cent B. H. No. 117	Per cent of Army
1	District of Columbia.....	0.39	0.42	26	Arizona.....	0.08	0.28
2	Rhode Island.....	.87	.45	27	Louisiana.....	.59	1.76
3	Massachusetts.....	7.57	3.53	28	Kansas.....	1.19	1.69
4	New York.....	12.80	9.79	29	Texas.....	3.05	4.29
5	New Jersey.....	4.28	2.80	30	Montana.....	.59	.97
6	California.....	1.66	2.98	31	Nebraska.....	1.11	1.27
7	Illinois.....	5.39	6.68	32	Vermont.....	.47	.25
8	Connecticut.....	3.17	1.33	33	Wyoming.....	.16	.30
9	Pennsylvania.....	14.70	7.93	34	Virginia.....	1.98	1.94
10	Ohio.....	5.74	5.35	35	Idaho.....	.32	.51
	10 highest ranks.....	(56.57)	(41.24)	36	Oklahoma.....	1.39	2.13
11	New Hampshire.....	.95	.24	37	Kentucky.....	1.11	2.00
12	Michigan.....	4.08	3.61	38	Tennessee.....	.79	2.02
13	Maryland.....	1.43	1.25	39	West Virginia.....	1.27	1.48
14	Washington.....	1.15	1.20	40	Georgia.....	1.07	2.28
15	Delaware.....	.16	.20	41	Alabama.....	1.31	1.99
16	Indiana.....	1.92	2.83	42	Nevada.....	.08	.14
17	Oregon.....	.32	.80	43	North Carolina.....	.67	1.94
18	Colorado.....	.53	.92	44	New Mexico.....	.24	.33
19	Utah.....	.32	.46	45	South Carolina.....	.87	1.42
20	Wisconsin.....	4.49	2.61	46	Arkansas.....	.59	1.62
21	Missouri.....	2.77	3.42	47	South Dakota.....	.12	.79
22	Minnesota.....	1.27	2.64	48	North Dakota.....	.63	.69
23	Maine.....	1.27	.65	49	Mississippi.....	.52	1.44
24	Florida.....	.33	.89		10 lowest ranks.....	(6.10)	(12.64)
	Total.....	77.66	62.96		Total.....	20.20	33.53

^d Obtained from Abstract of the Fourteenth Census of the United States, Government Printing Office, 1920, page 75. Includes District of Columbia and omits Iowa, rank 25.

TABLE 3.—Rank order of States* from the standpoint of density of population related to the percentages of the total Army enlistments and of the patients of Base Hospital No. 117 from those States

Rank	State	Per cent B. H. No. 117	Per cent of Army	Rank	State	Per cent B. H. No. 117	Per cent of Army
1	District of Columbia.....	0.39	0.42	26	Louisiana.....	0.59	1.76
2	Rhode Island.....	.87	.45	27½	Vermont.....	.47	.25
3	Massachusetts.....	7.57	3.53	27½	Mississippi.....	.52	1.44
4	New Jersey.....	4.28	2.80	29	Arkansas.....	.59	1.62
5	Connecticut.....	3.17	1.33	30	Minnesota.....	1.27	2.64
6	New York.....	12.80	9.79	31	Oklahoma.....	1.39	2.13
7	Pennsylvania.....	14.70	7.63	32	Maine.....	1.27	.65
8	Maryland.....	1.43	1.25	33	California.....	1.66	2.98
9	Ohio.....	5.74	5.33	34	Kansas.....	1.19	1.69
10	Illinois.....	5.39	6.68	35	Washington.....	1.15	1.20
	10 highest ranks.....	(56.34)	(39.41)	36	Texas.....	3.05	4.29
11	Delaware.....	.16	.20	37	Florida.....	.35	.89
12	Indiana.....	1.92	2.83	38	Nebraska.....	1.11	1.27
13	Michigan.....	4.08	3.61	39	North Dakota.....	.63	.69
14	West Virginia.....	1.27	1.48	40	Colorado.....	.63	.92
15	Kentucky.....	1.11	2.00	41	South Dakota.....	.12	.79
16	Virginia.....	1.98	1.94	42	Oregon.....	.32	.80
17	Tennessee.....	.79	2.02	43	Utah.....	.32	.46
18	South Carolina.....	.87	1.42	44	Idaho.....	.32	.51
19	North Carolina.....	.67	1.94	45	Montana.....	.59	.97
20	Missouri.....	2.77	3.42	46½	New Mexico.....	.24	.33
21	Georgia.....	1.07	2.28	46½	Arizona.....	.08	.28
22	New Hampshire.....	.95	.24	48	Wyoming.....	.16	.30
23	Wisconsin.....	4.49	2.61	49	Nevada.....	.08	.14
24	Alabama.....	1.31	1.99		10 lowest ranks.....	(2.86)	(5.50)
	Total.....	79.78	67.39		Total.....	18.08	29.00

* Obtained from Abstract of Fourteenth Census of the United States, page 22. Includes District of Columbia and omits Iowa, rank 25.

TABLE 4.—Rank order of States^f from the standpoint of their percentage of foreign-born population related to percentage of the Army enlistments and of Base Hospital No. 117 patients from those States

Rank	State	Per cent B. H. No. 117	Per cent of Army	Rank	State	Per cent B. H. No. 117	Per cent of Army
1	Rhode Island.....	0.87	0.45	26	Nebraska.....	1.11	1.27
2	Massachusetts.....	7.57	3.53	27 ¹ / ₂	Iowa.....	2.44	2.63
3	Connecticut.....	3.17	1.33	27 ¹ / ₂	Idaho.....	.32	.51
4	New York.....	12.80	9.79	29	Delaware.....	.16	.20
5	Arizona.....	.08	.28	30	New Mexico.....	.24	.33
6	New Jersey.....	4.28	2.80	31	Texas.....	3.05	4.29
7	California.....	1.66	2.98	32	Maryland.....	1.43	1.25
8	Nevada.....	.08	.14	33	District of Columbia.....	.39	.42
9	New Hampshire.....	.95	.24	34	Kansas.....	1.19	1.69
10 ¹ / ₂	Minnesota.....	1.27	2.64	35	Florida.....	.33	.89
	10 highest ranks.....	(32.73)	(24.18)	36	Missouri.....	2.77	3.42
10 ¹ / ₂	North Dakota.....	.63	.69	37	Indiana.....	1.92	2.83
12	Michigan.....	4.08	3.61	38	West Virginia.....	1.27	1.48
13	Washington.....	1.15	1.20	39	Louisiana.....	.59	1.76
14	Illinois.....	5.39	6.68	40	Oklahoma.....	1.39	2.13
15	Wisconsin.....	4.49	2.61	41	Virginia.....	1.98	1.94
16	Montana.....	.59	.97	42	Kentucky.....	1.11	2.00
17	Pennsylvania.....	14.70	7.93	43 ¹ / ₂	Alabama.....	1.31	1.99
18	Maine.....	1.27	.65	43 ¹ / ₂	Arkansas.....	.59	1.62
19 ¹ / ₂	Wyoming.....	.16	.30	43 ¹ / ₂	Tennessee.....	.79	2.02
19 ¹ / ₂	Oregon.....	.32	.80	45	Georgia.....	1.07	2.28
21	Utah.....	.32	.46	46	Mississippi.....	.52	1.44
22	South Dakota.....	.12	.79	47	South Carolina.....	.87	1.42
23	Colorado.....	.63	.92	48	North Carolina.....	.67	1.94
24	Vermont.....	.47	.25	49	10 lowest ranks.....	(10.30)	(18.76)
	Totals.....	67.05	52.04		Totals.....	27.21	41.75

^f Obtained from Abstract of Fourteenth Census of the United States, p. 103. Includes District of Columbia and omits Ohio, rank 25.

TABLE 5.—Rank order of States^g from the standpoint of their percentage of males 10 years and over engaged in agricultural work related to the percentage of the total Army enlistments and of the patients of Base Hospital No. 117 from those States

Rank	State	Per cent B. H. No. 117	Per cent of Army	Rank	State	Per cent B. H. No. 117	Per cent of Army
1	Mississippi.....	0.52	1.44	26	Oregon.....	0.32	0.80
2	Arkansas.....	.59	1.62	27	Wyoming.....	.16	.30
3	North Dakota.....	.63	.69	28	Utah.....	.32	.46
4	South Carolina.....	.87	1.42	29	Colorado.....	.63	.92
5	South Dakota.....	.12	.79	30	Indiana.....	1.92	2.83
6	Georgia.....	1.07	2.28	31	Maine.....	1.27	.65
7	North Carolina.....	.67	1.94	32	Arizona.....	.08	.28
8	Alabama.....	1.31	1.99	33	West Virginia.....	1.27	1.48
9	Tennessee.....	.79	2.02	34	Washington.....	1.15	1.20
10	Idaho.....	.32	.51	35	Nevada.....	.08	.14
	10 highest ranks.....	(6.89)	(14.70)	36	Delaware.....	.16	.20
11	Kentucky.....	1.11	2.00	37	Michigan.....	4.08	3.61
12	Oklahoma.....	1.39	2.13	38	California.....	1.66	2.98
13	New Mexico.....	.24	.33	39	New Hampshire.....	.95	.24
14	Texas.....	3.05	4.29	40	Maryland.....	1.43	1.25
15	Nebraska.....	1.11	1.27	41	Ohio.....	5.74	5.33
16	Louisiana.....	.59	1.76	42	Illinois.....	5.39	6.68
17	Iowa.....	2.14	2.63	43	Pennsylvania.....	14.70	7.93
18	Montana.....	.59	.97	44	New York.....	12.80	9.79
19	Kansas.....	1.19	1.69	45	Connecticut.....	3.17	1.33
20	Virginia.....	1.98	1.94	46	New Jersey.....	4.28	2.80
21	Minnesota.....	1.27	2.64	47	Massachusetts.....	7.57	3.53
22	Vermont.....	.47	.25	47	Rhode Island.....	.87	.45
23	Wisconsin.....	4.49	2.61	48	District of Columbia.....	.39	.42
24	Florida.....	.33	.89	49	10 lowest ranks.....	(56.34)	(39.51)
	Totals.....	26.84	40.10		Totals.....	70.39	55.60

^g Obtained from Abstract of Fourteenth Census of the United States, p. 501. Agricultural work as the term used in the census tabulations also included forestry and animal husbandry. Includes District of Columbia and omits Missouri, rank 25.

When the draft quotas were being filled, it was found that the different parts of the country varied in physical readiness and vitality. Ayres,¹⁷ after presenting the official statistics for the physical fitness of the various States as expressed in the percentage of men accepted of all those called for national service, says: "In general, it is noteworthy that the best records are made by those States that are agricultural rather than industrial and where the numbers of recently arrived immigrants are not large." It should be observed, while noting the striking similarity for these data and those of Ayres, that there need not necessarily be any relationship between the percentage of physical defect among recruits and the percentage of neuropathic tendency among those selected after an examination for physical fitness has eliminated the unfit.

Another aspect of the problem, which should be considered in attempting a definition of the gross environment factors from which the war neurotics were recruits, is occupation. This has already been touched upon from one angle (agricultural work).

In Table 6, the Bureau of the Census data on occupations are compared directly, for each type of work, with the occupations given by the Base Hospital No. 117 patients (officers and enlisted men) in their clinical records. Several items, viz., mining, manufacturing, trade, and public service, involving about 50 per cent of the group, were similar in proportion in both sets of data. It is noteworthy, however, that whereas the percentage of males over 10 years in the United States in employment of some kind who were doing agricultural work was 29.8 per cent in 1920, only 11.5 per cent of the hospital patients gave agricultural work as their occupation when questioned at the hospital. On the other hand, the professional quota in the census is 3.4 per cent, while in the total hospital groups it is 7.2 per cent; likewise, the percentage of men in clerical work in the country at large was 5.11 per cent, while among the hospital groups it was 15.91 per cent; work related to transportation took in 13.8 per cent of the hospital groups and but 8.6 per cent of the males of the country at large. There were fewer (2.5 per cent) of the hospital group engaged in domestic work than the quota for the country at large (3.7 per cent). The last might be accounted for by alien exemptions and the ages of men engaged in domestic work. While recognizing the obvious tendencies of the data, it should also be remembered that 293 patients gave their occupation as "labor" and 124 were students. These cases, comprising 15.50 per cent of the group, are not used in the computations in Table 6 because of the indefiniteness of description and the inability to allocate them in terms of the Bureau of the Census classification. The data taken in comparison with the census figures unmistakably indicate that so far as occupational milieu was concerned men who were engaged in clerical, professional, or transportation work were liable to develop war neurosis in greater proportion than their quota in the total male population would warrant.

TABLE 6.—*Comparison of distribution of types of occupation of Base Hospital No. 117 patients with certain other groups*

Type of work defined by 1920 census	Base Hospital 117 total group		1920 Census ²		Enlisted men in A. E. F. ³		Enlisted men, Base Hospital No. 117 patients	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
1. Agriculture.....	261	11.5	9,869,090	29.8	161,975	29.9	257	12.1
2. Extraction of minerals.....	53	2.3	1,087,359	3.3	12,239	2.3	52	2.5
3. Manufacturing and mechanical trades.....	789	34.7	10,888,183	32.9	151,429	28.0	780	36.6
4. Transportation.....	313	13.8	2,850,528	8.6	70,231	13.0	312	14.7
5. Trade.....	253	11.1	3,575,187	10.8	36,816	6.8	214	10.1
6. Public Service.....	45	2.0	748,666	2.3	18,099	3.3	26	1.3
7. Professional.....	163	7.2	1,127,391	3.4	34,748	6.4	117	5.5
8. Domestic Service.....	57	2.5	1,217,958	3.7	4,535	0.8	57	2.7
9. Clerical.....	339	15.9	1,700,425	5.1	51,429	9.5	319	14.5
Total ¹	2,273	100.0	33,064,737	100.0	541,501	100.0	2,134	100.0

¹ Does not include 4,937 of American Expeditionary Forces given as "education, extent of" and 37,034 given as "laborer" (total, 7.2 per cent). Likewise for Base Hospital No. 117 total group, 293 who gave occupation of laborer and 124 as students are omitted (total, 15.50 per cent).

² Fourteenth Census of the United States, 1920, iv, 3.

³ Personnel System of the U. S. Army, Vol. I, U. S. Government Printing Office, 1919, i, 213-216.

There are available some occupation statistics on over half a million enlisted men of the American Expeditionary Forces, which are useful for comparison with our own. These data are arranged in Table 6 according to the census categories for the purpose of comparison. As indicated in the footnote to Table 6, two groups are omitted as inadequately descriptive and incapable of being fitted into this classification. Otherwise the group totals 541,501. As one would expect, these figures show that the enlisted men of the Army in France were not a perfect sampling of the occupational cross section of the male workers of the country; especially is the variation from the census notable in professional and clerical work, domestic service, transportation, and trade. Only in the agricultural figures are the two sets of facts practically identical.

When the enlisted men of the Base Hospital No. 117 patients are compared with the American Expeditionary Forces, figures for occupations of enlisted men, we find certain items in disagreement. The quotas of patients, especially for agriculture, and also for public service and domestic service are considerably less than expectation, whereas the quotas for manufacturing and mechanical trades, clerical work, and trade, are greater than expectation. The most striking difference is again in the small percentage in the agricultural group, while the greater proportion in clerical and domestic work and in trade are the most significant differences in the other direction, namely, toward a greater representation among the psychoneurosis patients than their proportional quotas. There is a slightly smaller percentage of the patients in professional work than the proportion of the American Expeditionary Forces, soldiers. This difference may be accounted for by errors in the collection of the American Expeditionary Forces, data; the very small number who gave the occupation "student" being indicative of a possible exaggeration of occupational status by these individuals into the professional ranks. In general, the tendency is for the patients to be engaged in bookish, indoor, commercial work in greater proportion than the Army in general and to have a lesser proportion of men engaged in agricultural work. Unfortunately these data on the Base Hospital No. 117

group do not lend themselves to interpretation by any of the occupational scales now obtainable. In the succeeding chapter this problem will be reviewed in the light of more adequate data. For the present, however, it may be noted that the war neurotic group, which is high in the trade and clerical types of work and low in agricultural work when compared with the enlisted men of the American Expeditionary Forces, is probably at least the equal of the latter in general occupational rating.

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CHAPTER IX

A POSTWAR STUDY OF A TYPICAL GROUP OF WAR NEUROSES CASES IN 1919-20 AND 1924-25

THE 1919-20 STUDY

Reference was made in the beginning of the preceding chapter to the fact that in 1919 and 1924 studies were carried on, in the United States, of the post-war condition of certain of the war neurotic patients of Base Hospital No. 117, A. E. F. Plans for these studies were begun shortly after the armistice was signed, when the statistical work on clinical records at Base Hospital No. 117, A. E. F., was extended to include other purposes besides the definition of the nature of war neuroses and the make-up of patients. The preparation of an address list and the tabulation of supplementary data were undertaken to make possible a later study of these typical cases following their return to the United States.

The purpose of the study made in 1919-20 was to determine the condition of a typical group of bona fide war neurosis cases after their return to civilian life in America. Basically it was a search for tendency data concerning the war neurotic's readaptation to the condition of civilian life. Though adequate clinical conclusions for a medical definition of war neurosis or its aftermath could not be drawn from these data, because they are social rather than medical in bias, they nevertheless furnish certain practical insights into the problem of neurosis which may prove of value in directing attitudes toward the problems and difficulties which confronted the war neurotic in his attempts at readaptation.

The point of view used in organizing the data for purposes of summary is entirely a practical one. The former patients of the hospital are classified herein according to the type of civilian readjustment they have made and the extent to which they were able to be self-supporting. This point of view is similar to that underlying the military classifications used by the Army in France as definitive of the man's future military usefulness at the time of his discharge from the hospital.^a The problem was to find out how well or poorly these men were getting along in civilian life; whether they were working or not, or how much, if they were; whether ill or well, etc.; and to attempt to relate these facts to such data as were available about them individually and as a group.

As a matter of fact, neuroticism seems to be best defined in terms of the total situation—the patient and his environment. Especially is this important

^a All individuals in the American Expeditionary Forces were in one or another of the following physical classifications: Class A, all officers and enlisted men fit for combat service; class B, officers and enlisted men temporarily unfit for combat service but physically fit for other duty and restorable to a class A status within a period of six months after classification as B; class C, officers and enlisted men permanently unfit for combat service but capable of performing service in the Services of Supply; class D, officers and men unfit for any duty within the American Expeditionary Forces.

in cases where the persistence of the symptoms depends so largely upon environmental factors of the patient's life. A war neurotic who shortly after his discharge tries his old work in a machine shop and "goes to pieces," and who later leaves the city, works on a farm, and gets rid of his symptoms, would be considered finally cured, in so far as present purposes are concerned. Many of the men of the Base Hospital No. 117 group gave just such a history upon returning to America. Though a return to their old work doubtless would bring on a recurrence of their former troubles, judged from this more inclusive social viewpoint the men are now cured and are listed below in our classification as "normal."

In discussing the neurotic the dual fact of personality and environment must be considered, for, according to Southard,¹ not only must the patient be refitted to his entourage, but the entourage must be refitted to a returned "shell-shocker." So likewise in discussing the readaptation of the Base Hospital No. 117 group in 1919-20 and in a later follow-up group, 1924-25, considered more at length below, categories are used in terms of social status and ability to work and be self-supporting, as the following discussion attempts to bring out.

EXPLANATION OF THE CATEGORIES FOR PRESENT CONDITION OF THE WAR NEUROTIC GROUP

NORMAL

The first category to be used in discussing these cases is "normal." Under this come those men who, upon return home, went back to work and readjusted themselves to civilian life, or have been able to support themselves and their families. Many of them note certain novel tendencies in themselves, such as tendencies to become angry or excited easily, some little nervousness, restlessness, forgetfulness, and occasional slight headaches or dizziness (seldom enough to incapacitate them from work), and other like mild, neurotic symptoms. Yet the general health of these men is good; they are able to be self-supporting and are normally happy.

NEUROTIC

The second group, called "neurotic," consists of those who made partial readjustments to their old way of living, yet continued to suffer from one or more rather severe nervous difficulties. Most of these men were under a physician's care, or else had at least consulted one about their condition. They were able to work fairly well, but their own personal lives were unhappy because of these neurotic troubles. Some were assigned to lighter and easier work in their old places and were very sensitive about their lowered status. One finds among them the residue of symptoms shown in France—occasionally, fine tremors and ties, more often speech defects, weakness, insomnia, jumpiness, distressing inability to concentrate, memory disorders, and "spells" of all sorts. One case, that of a man with combined concussion and gas neurosis, working

as an express helper, fainted in a railroad station when a nearby locomotive puffed suddenly. A great many minor injuries and several serious accidents were reported by men in this group as the result of their nervous condition. The men of this group tended also to lose considerably in weight upon working hard, especially during the summer. In all men who carried over symptoms to civilian life there was a marked reaction to changes of weather, especially damp weather, which called out moods and depression, seriously handicapping them. In this "neurotic" group there were many men who upon return home tried their former work in machine shops or factories but could not control themselves and became nervous and tired. As one man put it: "I used to work a pneumatic drill but I can not any longer; the constancy of action is so much like a machine gun. I tried my best but could not stick it out. I had a semibreakdown." In the cases of some of the men when gas or ideas of gas were involved, indoor work was difficult. Many of these men, especially during the warm summer months, took positions as salesmen, farmers, sailors, laborers—any position which would give them outdoor work. This change in many cases was the basis of cure, for some later wrote that their new work agreed with them and they were gradually getting back to themselves. With difficulty in standing indoor work came the same inability to remain in noisy places, especially machine shops or factories. Also some men who were in school or college reported that they found it very difficult to concentrate upon their work and that their memories were bad.

FATIGUED

Third comes the group called "fatigued." Most of these men can not work regularly without suffering and being confined to bed. The symptoms here are ready fatigability, severe headaches, lack of ambition and depression (general neurasthenic coloring). Whereas the "neurotic group" are able to work, though with much discomfort, this group can work only on the average about one-half of the time. Some of them are fortunate in having easy jobs or considerate employers and so manage to support themselves after a fashion. In some cases where the men are married, their wives also are working to meet the expenses of living.

DISABLED

The fourth group consists of those at the time of the follow up (1919-20) actually rehospitalized for psychoneurosis or reporting a "nervous breakdown" or some incapacitating medical disease, such as tuberculosis. One would anticipate many physical disorders occurring as an aftermath of the conditions to which the men were exposed in France, and indeed, many of the men have had some difficulty as a result of these experiences. There may also be some men in the "fatigued" group outlined above who have disabilities of an organic nature. A study like the present one made by correspondence naturally can not make adequate clinical differentiations.

PSYCHOTICS

Fifth is the psychotic group, including such conditions as dementia præcox, psychopathic personality, and epilepsy. An interesting commentary is the infrequency of psychotic outworkings among the former patients of Base Hospital No. 117 as a group. In the 1919-20 study, only one suicide was reported—a man of poor stock and make-up, never at the front, who entered the hospital after the armistice was signed and was evacuated with the diagnosis "neurasthenia." Otherwise there were relatively few men (10, or about 1 per cent) whose condition had changed by 1920 from the psychoneurosis diagnosed at the hospital to a psychosis. By 1925 four deaths had been reported as suicides. Twelve were definitely psychotic, 14 were returned as either "in hospital; parents uncertain of address," or "lost" with a psychopathic coloring attaching to their disappearance. For instance, one man enlisted in the Navy under his brother's name, causing the family considerable trouble when he later deserted. The outside total of possible psychotics was 28 cases diagnosed psychoneurotic in France, or 3.4 per cent of the group. This is striking evidence favoring the psychological conception of war neuroses, for the mere possibility of insanity developing in 830 men over a period of seven years would probably not be less than this total.

In viewing the 1919-20 civilian status of these men in relation to their physical classification in France, when discharged from Base Hospital No. 117, several significant considerations arise. First of all, the American Expeditionary Forces physical classification was a practical estimate of future Army usefulness. It took into consideration such matters as health, strength, and endurance. Obviously these are factors which would be of significance in both Army and civilian life. Therefore, if the classifications were adequately made, then some positive correlation should exist between them and the 1919-20 conditions of the men. Second, it should likewise be appreciated that the ability of a man to return to the front calls upon factors in him differing from those that would be called forth in his attempting to get back, for example, to clerking or to farming in civilian life. Military conditions facing the man in France were obviously very different from civilian circumstances upon his return home. It is quite possible for Army misfits to be normal and even very successful in civil life. Third, the Army estimate of the value of a man before the armistice, when further battle service was under consideration, and during the armistice would be based on different factors; the latter would more nearly accord with the criteria of civilian usefulness. Consequently, throughout this discussion figures are given separately for the two groups of cases, those discharged from Base Hospital No. 117 before the armistice and those discharged during the armistice. The total figures are likewise used when the group as a whole is under consideration. The data on military classification are presented in several tables, and the conclusions from each of them are given in order.

TABLE 7.—*Comparison of the 1919-20 follow-up group and the total Base Hospital No. 117 service in regard to physical classification^a*

Physical classification	Column 1	Column 2	Column 3	Column 4
	Totals for follow up	Totals for hospital	Percentage of follow up	Percentage of all cases at B. H. No. 117
A.....	36 152	142 366	8.2 47.6	9.7 32.6
	188	508	24.8	19.6
B.....	210 68	696 316	47.9 21.0	47.4 28.1
	278	1,012	36.6	39.2
C.....	171 51	548 276	39.0 15.9	37.4 24.6
	222	824	29.3	31.8
D.....	11 46	32 139	2.5 14.4	2.2 12.4
	57	171	7.5	6.6
T ^b	10 3	48 27	2.3 1.0	3.3 2.4
	13	75	1.8	2.9
Total.....	438 (57.8) 320 (42.2)	1,466 (56.7) 1,124 (43.3)	100.0 100.0	100.0 100.0
	758 (100.0)	2,590 (100.0)	100.0	100.0

^a In each group of figures, the upper figure indicates cases discharged before the armistice; the second, cases discharged during the armistice; and the third (below the line) the total number or per cent.

^b Transferred to another hospital, unclassified.

Table 7 is concerned with the problem of the adequacy of sampling of the follow-up group as compared with the total hospital group from the standpoint of physical classification. The selection of cases used in this study is a good one, especially in reference to the proportions before and during the armistice, i. e., 57.8 per cent compared to 56.3 per cent and 42.2 per cent to 43.3 per cent (see totals in columns 1 and 2). Furthermore, the percentages of each class of the follow-up group and of each class of the total hospital group are also indicative of a good sampling (see the figures below the line, lowest figures of each group of three in columns 3 and 4; i. e., 24.6 per cent compared to 19.6 per cent, 36.6 per cent to 39.2 per cent; 29.3 per cent to 31.8 per cent; 7.5 per cent to 6.6 per cent; 1.8 per cent to 2.9 per cent). Likewise, the percentages of each class in the pre-armistice group of the follow up and of the hospital service (given on the top line in each grouping in columns 3 and 4) are nearly identical, i. e., 8.2 per cent compared to 9.7 per cent; 47.9 per cent to 47.4 per cent; 39.0 per cent to 37.4 per cent; 2.5 per cent to 2.2 per cent; 2.3 per cent to 3.3 per cent. There is more variation in the armistice figures (given in the middle of three in columns 3 and 4) than in the others; but it is, however, a fair sampling from the standpoint of the proportions of each class in the total hospital group (i. e., 47.6 per cent compared to 32.6 per cent; 21.0 per cent to 28.1 per cent; 15.9 per cent to 24.6 per cent; 14.4 per cent to 12.4 per cent; 1.0 per cent to 2.4 per cent).

Several other facts are to be ascertained upon inspection of the data on Table 7. First, the military fact is apparent from the totals at the bottom of column 2 that there were almost as many cases discharged from the hospital during the armistice as before it. The sudden ending of the war just after the United States had thrown our great Army into it, the population of Base Hospital No. 117 at the time of the signing of the armistice, the use of Base Hospital No. 117 as a reclassification center for war neurosis cases after the armistice was signed—these facts are the explanation for the nearly equal figures for discharges before and after the armistice began. Second, another military fact, it is notable that there was considerable difference in the percentage usage of the different classes before and during the armistice; namely, in class A the difference between its use in 10 per cent of the cases before the armistice and 33 per cent after the armistice had begun. The infrequency before the armistice of the physical classification A indicates that the members of the hospital personnel were only willing to send back to the front immediately 1 man in 10 of the discharged psychoneuroses cases, whereas during the armistice one in three were sent out class A to full duty in an army at peace.

From Table No. 8 we are able to get some idea of the actual prognostic value of military classification for readjustment in civilian life. The difference between the two tests of fitness, that of civil life and earning a living, that of army life and withstanding the hardships of battle conditions, are obvious. Yet there are enough similarities to justify an expectation of a positive correlation between the facts. Reviewing the figures, we find in the column for class A that 68.1 per cent of the patients reached were carrying on in civilian life in 1919-20; i. e., 45.2 per cent were "normal" according to our categories and 22.9 per cent "neurotic." Of those given class B, 64.8 per cent were carrying on, of whom 41.8 per cent were "normal" and 23 per cent were "neurotic." Of those given class C, 55.4 per cent were carrying on, 33.3 per cent were "normal," and 22.1 per cent "neurotic." Of those given class D, 40.3 per cent were carrying on, of whom 21 per cent were "normal" and 19.3 per cent were "neurotic." The T group is too small and indefinite for drawing inferences; usually the neurotic condition was complicated by other medical considerations.

The class B men of before the armistice are as a group readjusting themselves better to civilian life than the prearmistice class A group. Of course, some of the class A group got back to the front again (several were wounded, a few killed in action), others had "relapses" and were returned to Base Hospital No. 117, whereas, since the war ended so soon, few of the B class patients were used again in battle. There is a corollary to this last in that although about 1 in 2 of the discharged psychoneurosis cases were sent out before the armistice as class B, only 3 in 10 were so classed after the armistice began. The 47 per cent in class B before the armistice indicated a general optimism that a short time out of the hospital and back among other soldiers would cause these men to become suitable as members of combat units.

The 37 per cent class C before the armistice indicates that it was not practical with three-eighths of the men to try to so groom them for front-line duty. The C class discharges dropped from 37 per cent before the armistice

to 21 per cent afterwards. The increase in class D after the armistice had begun is due to clearing out uncured cases and sending them to hospitals at the ports for further treatment or for return to the United States.

TABLE 8.—*American Expeditionary Forces, physical classification of 1919-20 follow-up group in relation to condition in 1919-20*^a

	Class A		Class B		Class C		Class D		Class T ^b		Total	
	Num- ber	Per- centage	Num- ber	Per- centage	Num- ber	Per- centage	Num- ber	Per- centage	Num- ber	Per- centage	Num- ber	Per- centage
Normal.....	15 70	41.7 46.1	94 22	44.9 32.8	55 19	32.2 37.3	2 10	18.2 21.7	5 3	50.0 100.0	171 124	39.0 38.7
	85	45.2	116	41.8	74	33.3	12	21.0	8	61.5	295	38.9
Neurotic.....	8 35	22.2 23.0	47 17	22.4 25.0	41 8	23.9 15.7	2 9	18.2 19.6	----- -----	----- -----	98 69	22.4 21.5
	43	22.9	64	23.0	49	22.1	11	19.3	-----	-----	167	22.0
Fatigued.....	4 28	11.1 18.4	32 13	15.1 19.4	29 12	17.0 23.5	2 11	18.2 23.9	----- -----	----- -----	67 64	15.3 20.0
	32	17.0	45	16.2	41	18.5	13	22.8	-----	-----	131	17.3
Disabled.....	8 19	22.2 12.5	37 16	17.6 23.8	42 10	24.6 19.6	5 15	45.5 32.6	3 -----	30.0 -----	95 60	21.7 18.6
	27	14.3	53	19.1	52	23.4	20	35.1	3	23.1	155	20.4
Psychotic.....	1 -----	2.8 -----	----- -----	----- -----	4 2	2.3 3.9	----- 1	----- 2.2	2 -----	20.0 -----	7 3	1.6 .9
Total.....	1 36 152 188	.5 100.0 100.0 100.0	----- 210 68 278	----- 100.0 100.0 100.0	6 171 51 222	2.7 100.0 100.0 100.0	1 11 46 57	2.2 100.0 100.0 100.0	2 10 3 13	15.4 100.0 100.0 100.0	10 438 320 758	1.3 100.0 100.0 100.0

^a The upper number in each group indicates cases discharged from Base Hospital No. 117 before the armistice; the second number, cases discharged during the armistice; and the number below the line, total.

^b Transferred to another hospital, unclassified.

Lastly, Table 8 shows (figures in the "Totals" column) that the recoveries or nonrecoveries from war neuroses of the group studied in relation to military classification gives percentages about the same for those discharged before and those discharged during the armistice. In the two largest groups, i. e., "normal" and "neurotic," the percentages before and during the armistice are nearly identical (39 per cent and 38.7 per cent and 22.4 per cent and 21.5 per cent, respectively). The chances that a man discharged in class A, for instance, would be normal in 1919-20 were about equal for him whether he was discharged before or during the armistice. In other words, the prognostic value of military classification for the group of men discharged from Base Hospital No. 117 before and during the armistice is about the same in terms of civilian readjustment.

By way of conclusion it may be said that the data on 1919-20 condition are a verification of the military classification. If the data were to run otherwise than as they do above, it might reflect seriously upon the categories of potential value used by the hospital personnel. The tendency of the data indicates that the medical staff in France gave a good practical consideration

of the make-up and potential value of a soldier before launching him forth with a physical classification to the replacement centers for further utilization of his services by the army.

DIAGNOSIS IN FRANCE IN RELATION TO 1919-20 CONDITION

Diagnosis in mental disease, especially with the psychoneuroses, is less absolute and clean-cut than in many of the physical diseases. At Base Hospital No. 117 there were 12 possible diagnoses under the general head of psychoneurosis. It is obvious that in making a diagnosis among these categories there would be found considerable overlapping of symptoms and many difficulties in accurately differentiating symptom groupings. The list of these diagnoses is given above in Chapter V, page 372.

It must be appreciated that the diagnoses referred to, which were devised for the psychoneurosis cases at Base Hospital No. 117, were not used with entire uniformity by the medical officers. Hysteria might be given as the diagnosis by one, whereas the same symptoms drew the diagnosis concussion neurosis from another. These variations were chiefly attributable to officers assigned to the hospital for temporary duty or for training. On the whole, however, the diagnoses were similarly used, for the majority of the cases were diagnosed by a small group of men, the original staff (or others under their supervision), whose notions of the different types of neuroses for the most part coincided. Thus, the great majority of the diagnoses follow the scheme of classification used at the hospital, and the error, above mentioned, though it does enter, plays but a minor part.

Our first inquiry into the question of diagnosis and its relation to present condition is in regard to the selection of cases in the follow up. Table 9 gives the frequency of usage of the various diagnoses at Base Hospital No. 117 in France; Table 10 gives the frequency of their occurrence in the follow-up group compared with the total hospital group. Inspection of the percentages for totals in Table 10 for each diagnosis (given below the lines) shows that the follow up is a good sampling of the total hospital group. For instance, hysteria occurs in 27.6 per cent of the cases in the hospital service and 25.9 per cent in the follow up; concussion neurosis occurs in the relative proportions 22.1 per cent and 22.9 per cent; neurasthenia 12.1 per cent as compared to 14.4 per cent; others run 2.8 per cent to 3.8 per cent; 5.1 per cent to 5.4 per cent; 2.1 per cent to 2.2 per cent; 8 per cent to 6.7 per cent; etc.

TABLE 9.—*Frequency of usage of diagnoses and physical classifications of psychoneurosis cases discharged from Base Hospital No. 177^a*

Diagnosis	Physical classification					Totals
	A	B	C	D	T ^b	
Hysteria.....	30 93	119 92	208 98	19 49	3 6	379 338
	123	211	306	68	9	717
Concussion neurosis.....	17 112	236 79	64 38	0 17	9 1	326 247
	129	315	102	17	10	573
Neurasthenia.....	14 15	69 18	95 56	0 37	9 1	187 127
	29	87	151	37	10	314
Hypochondriasis.....	2 4	10 1	41 18	5 16	0 0	58 39
	6	11	59	21	0	97
Exhaustion.....	13 28	49 30	7 9	1 0	2 0	72 67
	41	79	16	1	2	139
Effort syndrome.....	3 3	17 8	7 12	0 3	1 3	28 29
	6	25	19	3	4	57
Anxiety neurosis.....	4 14	55 24	55 15	2 3	2 0	118 56
	18	79	70	5	2	174
Concussion syndrome.....	42 37	112 30	11 7	1 0	15 3	181 77
	79	142	18	1	18	258
Psychasthenia.....	3 2	4 2	18 2	2 6	1 0	28 12
	5	6	20	8	1	40
Timorousness (state of anxiety).....	1 11	3 6	11 15	2 1	3 0	20 33
	12	9	26	3	3	53
Anticipation neurosis.....	0 1	4 0	18 2	0 2	0 2	22 7
	1	4	20	2	2	29
Gas neurosis.....	2 11	11 13	8 3	0 3	0 0	21 30
	13	24	11	3	0	51
Gas syndrome.....	0 1	2 6	1 0	0 1	----- -----	3 8
	1	8	1	1	-----	11
Traumatic neurosis.....	1	1	1	0	1	4
Gastric neurosis.....	0	0	0	1	0	1
Post-operative neurosis.....	1	1	1	1	1	5
No disease found.....	10 34	4 7	3 1	----- -----	2 11	19 53
	44	11	4	-----	13	72
Totals.....	142 366	696 316	548 276	32 139	48 27	1,466 1,124
	508	1,012	824	171	75	2,590

^a The upper number in each group indicates the cases discharged from Base Hospital No. 117 before the armistice; the second, cases discharged during the armistice; and the number below the line, the total.

^b Transferred to another hospital, unclassified.

TABLE 10.—*Comparison of the 1919-20 follow-up group and the total population of Base Hospital No. 117 in regard to diagnosis*^a

Diagnosis	Totals for follow up	Totals for hospi- tal group	Percent- age of follow up	Percent- age of hospital group
Hysteria.....	101 95	379 338	23.1 29.7	25.9 30.1
	196	717	25.9	27.6
Concussion neurosis.....	98 76	326 247	22.4 23.7	22.2 22.0
	174	573	22.9	22.1
Neurasthenia.....	63 46	187 127	14.4 14.4	17.8 11.3
	109	314	14.4	12.1
Hypochondriasis.....	12 9	58 39	2.8 2.8	3.9 3.4
	21	97	2.8	3.8
Exhaustion.....	21 17	72 67	4.8 5.3	4.9 5.9
	38	139	5.1	5.4
Effort syndrome.....	10 6	28 29	2.3 1.7	1.9 2.6
	16	57	2.1	2.2
Anxiety neurosis.....	40 21	118 56	9.1 6.7	8.1 4.9
	61	174	8.0	6.7
Concussion syndrome.....	53 19	181 77	12.1 5.9	12.4 6.9
	72	258	9.5	10.0
Psychasthenia.....	8 7	28 12	1.8 2.2	1.9 1.1
	15	40	2.0	1.6
Timorousness (state of anxiety).....	13 4	20 33	2.9 1.3	1.4 2.9
	17	53	2.2	2.0
Anticipation neurosis.....	12 0	22 7	2.8 0.0	1.5 0.6
	12	29	1.6	1.1
Gas neurosis.....	5 10	21 30	1.1 3.1	1.4 2.7
	15	51	1.9	1.9
Gas syndrome.....	1 0	3 8	0.2 0.0	0.2 0.7
	1	11	0.1	0.4
Traumatic neurosis.....	0	4	0.0	0.3
Gastric neurosis.....	0	1	0.0	0.1
	0	5	0.0	0.2
Post-operative neurosis.....	1	19	0.2	1.2
No disease found.....	10	53	3.1	4.7
	11	72	1.4	2.8
Total.....	438 320	1,466 1,124	100.0 100.0	100.0 100.0
	758	2,590	100.0	100.0

^a The upper number in each group indicates the cases discharged from Base Hospital No. 117 before the armistice; the second, cases discharged during the armistice; and the number below the line, the total.

Table 11 gives the relationship of diagnoses to condition in 1919-20. The psychotics are combined with the organic group; individual statistics for those classed psychotics here are to be found in Table 12. Some of the diagnostic groups are very small. They are included in part for the sake of completeness, for, since they are a representative sampling of the total hospital service, their proportionate size is a just index of their frequency of occurrence in Base Hospital No. 117 in France.

TABLE 11.—*Condition in 1919-20 in relation to diagnosis in France **

	Normal		Neurotic		Fatigued		Disabled and psychotic		Total	
	Num-ber	Per-centage	Num-ber	Per-centage	Num-ber	Per-centage	Num-ber	Per-centage	Num-ber	Per-centage
Hysteria.....	26 34 60	25.7 35.8 30.6	29 18 47	28.8 18.9 24.0	20 20 40	19.8 21.1 20.4	26 23 49	25.7 24.2 25.0	101 95 196	23.1 29.7 25.9
Concussion neurosis.....	44 29 73	44.9 38.1 41.9	28 17 45	28.6 22.3 25.9	8 18 26	08.2 23.7 14.9	18 12 30	18.4 15.8 17.2	98 76 174	22.4 23.7 22.9
Neurasthenia.....	27 9 36	42.8 19.6 33.0	10 9 19	15.9 19.6 17.4	15 15 30	23.8 32.6 27.5	11 13 24	17.4 28.2 22.0	63 46 109	14.4 14.4 14.4
Concussion syndrome.....	29 9 38	54.7 47.3 52.8	6 6 12	11.3 31.6 16.7	9 1 10	17.0 5.3 13.8	9 3 12	17.0 15.8 16.7	53 19 72	12.1 5.9 9.5
Anxiety neurosis.....	17 9 26	42.5 42.9 42.6	13 7 20	32.5 33.3 32.9	4 4 8	1.0 19.0 13.1	6 1 7	15.0 4.8 11.4	40 21 61	9.1 6.7 8.0
Exhaustion neurosis.....	11 8 19	52.4 47.0 50.0	0 4 4	0.0 23.5 10.5	4 1 5	18.6 5.9 13.2	6 4 10	28.6 23.5 26.3	21 17 38	4.8 5.3 5.1
Hypochondriasis.....	3 4 7	25.0 44.4 33.3	1 2 3	8.3 22.2 14.3	2 0 2	16.6 0.0 9.5	6 3 9	50.0 33.3 42.8	12 9 21	2.8 2.8 2.8
Psychasthenia.....	3 8 5	37.5 28.6 33.3	0 2 2	0.0 28.6 13.3	1 2 3	12.5 28.6 20.0	4 1 5	50.0 14.2 33.5	8 7 15	1.8 2.2 2.0
Gas neurosis.....	1 6 7	20.0 60.0 46.8	2 2 4	40.0 20.0 26.6	1 1 2	20.0 10.0 13.3	1 1 2	20.0 10.0 13.3	5 10 15	1.1 3.1 1.9
Anticipation neurosis.....	4 0 4	33.3 0.0 33.3	4 0 4	33.3 0.0 33.3	1 0 1	8.3 0.0 8.3	3 0 3	25.0 0.0 25.0	12 0 12	2.8 0.0 1.6
Effort syndrome.....	1 4 5	10.0 66.7 31.2	3 1 4	30.0 16.7 25.0	0 1 1	0.0 16.7 6.2	6 0 6	60.0 0.0 37.5	10 6 16	2.3 1.7 2.1
Timorousness.....	5 3 8	38.5 75.0 47.1	2 0 2	15.4 0.0 11.8	1 0 1	7.7 0.0 5.9	5 1 6	38.5 25.0 35.3	13 4 17	2.9 1.3 2.2
Gas syndrome.....	----- ----- -----	----- ----- -----	----- ----- -----	----- ----- -----	1 0 1	100.0 0.0 100.0	----- ----- -----	----- ----- -----	1 0 1	0.2 0.0 0.1
No disease found.....	0 7 7	0.0 71.0 63.7	0 1 1	0.0 10.0 9.1	0 1 1	0.0 10.0 9.1	1 1 2	100.0 10.0 18.2	1 10 11	0.2 3.1 1.4

* The upper number in each group indicates the cases discharged from Base Hospital No. 117 before the armistice; the second, cases discharged during the armistice; and the number below the line, the total.

TABLE 12.—Condition in 1919-20 in relation to diagnosis and physical classification

	Normal						Neurotic						Fatigued						Organic						Psychotic						Totals					
	A	B	C	D	T ^a	T ^a - Total	A	B	C	D	T ^a	T ^a - Total	A	B	C	D	T ^a	T ^a - Total	A	B	C	D	T ^a	T ^a - Total	A	B	C	D	T ^a	T ^a - Total						
Hysteria:																																				
Preamblistic	2	9	15			26	3	9	16	1		29																								
During armistice	18	7	6	3		34	11	3	2	2		18	7	4	5	4																				
Total	20	16	21	3		60	14	12	18	3		47	7	9	19	5																				
Concussion neurosis:																																				
Preamblistic	4	35	5			44	3	20	5			28	1	7																						
During armistice	23	3	1	2		29	11	2	3	1		17	13	4																						
Total	27	38	6	2		73	14	22	8	1		45	14	11																						
Neurasthenia:																																				
Preamblistic	2	11	13			1	27		5	5		10																								
During armistice	4		4	1		9	2	1	1	5		9	3	3	5	4																				
Total	6	11	17	1		1	36	2	6	5		19	3	8	14	5																				
Concussion syndrome:																																				
Preamblistic	2	21	4	1		29	1	4	1			6	1	8																						
During armistice	6	3				9	2	4				6	1																							
Total	8	24	4	1		1	38	3	8	1		12	2	8																						
Anxiety neurosis:																																				
Preamblistic	1	10	5			1	17	1	5	6	1	13	1	1	2																					
During armistice	5	3				1	9	5	1	1		7		1	2	1																				
Total	6	13	5			2	26	6	6	7	1	20	1	2	4	1																				
Exhaustion neurosis:																																				
Preamblistic	4	6	1			11								4																						
During armistice	2	3	3			8	2	2				4	1		2																					
Total	6	9	4			19	2	2				4	1	4	2																					
Hypochondriasis:																																				
Preamblistic			2	1		3			1			1			2																					
During armistice			3	1		4			1	1		2																								
Total			5	2		7				2	1	3																								
Psychasthenia:																																				
Preamblistic			3			3							1																							
During armistice	1		1			2		2				2	1	1																						
Total	1		3	1		5		2				2	2																							

[illegible]

• Transferred to another hospital, unclassified,

If we combine for each diagnosis the normal and neurotic groups, that is, the patients of the hospital who were engaged in some pursuit in civilian life in 1919-20, and compare the various diagnoses on the basis of percentage working and percentage disabled (fatigued, disabled, or psychotic) some interesting data come to the surface. For instance, if we rank the various diagnoses on the basis of the percentage of those reached in 1919-20 who were working in civilian life we get the following figures:

TABLE 13.—*Rank order of diagnoses on the basis of the percentage of those carrying on in civilian life in 1919-20*

Diagnosis	Per cent	Diagnosis	Per cent
1. Anxiety neurosis.....	75.5 (N-61)	8. Timorousness.....	58.8 (N-17)
2. Anticipation neurosis.....	75.0 (N-12)	9. Effort syndrome.....	56.2 (N-16)
3. Gas neurosis.....	73.4 (N-15)	10. Hysteria.....	54.6 (N-196)
4. No disease.....	72.5 (N-11)	11. Psychasthenia.....	53.3 (N-15)
5. Concussion syndrome.....	69.5 (N-72)	12. Neurasthenia.....	50.4 (N-109)
6. Concussion neurosis.....	67.8 (N-174)	13. Hypochondriasis.....	47.6 (N-21)
7. Exhaustion neurosis.....	60.5 (N-38)		

Thus it is seen that the typical war neuroses—notably the concussion, gas, and anxiety types—rank very high in percentage of successful readaptation, while the more pronounced constitutional types rank lower. A commentary of no little interest here is that the conclusions offered by these data approach very nearly the prognoses made by the medical staff of the hospital, while the men were still in France, as to the future well-being of the various types of these cases. The exhaustion, concussion, and anxiety cases were given the best prognosis, the effort syndrome cases, the cases of neurasthenia, psychasthenia, and hypochondriasis the worst. Hysteria was placed in between these groups. And no one predicted any marked number of psychotic outworkings from these symptoms. These facts are in the most part borne out by the above figures. The fact that the true battle neuroses—the concussion cases, for instance—are readjusting themselves better proportionately than the timorous, neurasthenic, or hypochondriacal types is interesting, showing, as it does, how incorrect are the popular notions of war neuroses. Men who developed nervous symptoms in the cantonments at home are usually viewed with suspicion by ordinary persons and regarded almost as malingerers by many. The facts here indicate that the hypochondriasis, psychasthenia, neurasthenia, and timorousness groups, due perhaps to the long continued nervous state before the onset of symptoms, often playing upon constitutional susceptibility, do not readjust themselves nearly so well as the actual concussion cases; in other words, many men who never saw action have a more serious aftermath in symptoms than those who were actually in the thick of it, and were concussed by exploding shells or driven into an anxiety state by the fearful conditions and terrible sights at the front.

Among the cases of hysteria, the majority are having difficulty getting along in civil life, and, though earning their own living and seemingly carrying on their work, still they are constantly unhappy because of neurotic residues in the form of headache, insomnia, jumpiness, speech disorders, and often tics. On the whole, the men who had hysteria retain enough of their old condition

to handicap them seriously in their personal lives, though not always directly in their business activities. A little more than one-half of them are able to earn their living and ask financial aid of no one, but the great majority are nevertheless constantly seeking advice from physicians. The symptoms in France were usually so gross and vivid that one may believe they probably tended to lay stronger habit foundations than any of the other symptom groupings. An interesting point in reference to neurosis aftermath applicable to nearly all neurosis types, is derived from a physiological truism to which Mott² refers in discussing psychoneurosis: "Consciousness of the existence of an organ or structure interferes with its normal automatic or habitual action." War neurotics, who were sensitive for months to every change in their bodily feelings, who were keenly introspective and analytic of the existence of the various organs and structures of the body, are guilty of continuing even now this search for symptoms in themselves. And it is rare indeed that this search is unrewarded; for example, anyone can produce a headache by introspection of the contents of the cranium continued over several minutes. These men are slow to recognize the feeling of well being, quick to note any signs of possible ill being. This morbid practice may be the basis of many of their present difficulties.

The effort syndrome cases also tend to be seriously and permanently affected by their symptoms. The great cause for the persistence of symptoms among these cases is that the facilities for treating the men in France were not adequate for the needs. Time and special care, both vital factors in these cases, could not be offered at a hospital where beds were constantly in demand and where there was no room for chronic cases requiring lengthy treatment. The result was that these patients were for the most part sent to light duty in the Services of Supply. Unfortunately, the officers assigning men to duty at replacement camps as a rule did not consider the mental condition of the men so much as their physical appearance. Many men, not only in this group but in all groups, were sent to duty too soon.

The group diagnosed as state of anxiety or timorousness show a great number as being permanently affected by their condition in France. The explanation in this case, as in some of those diagnosed hypochondriasis, rests in the make-up of the individuals. These were men who as a group were of inferior intelligence, dull normals, or even morons. The cure of a neurosis in an intellectually inferior person is usually very difficult.

The men diagnosed as "Psychoneurosis, no disease found," were an anomalous group, and generally some other medical diagnosis followed this one. Base Hospital No. 117 being only for psychoneurosis cases, that diagnosis in some form had to be given on the patient's discharge slip when transferred to another hospital for treatment. The percentage of successful readjustment among members of this group represents cures from diseases other than psychoneurosis.

PHYSICAL AND MENTAL CONSIDERATIONS IN RELATION TO CONDITION
IN 1919-20

AGE AT TIME OF HOSPITALIZATION

The follow-up group under consideration is a good sampling of the entire group of patients at Base Hospital No. 117 in the matter of age. This is shown by the fact that the median age for the follow-up group is 24.46 years, while that for the total hospital population is 24.66 years. The numbers for each age are given in Table 14.

TABLE 14.—Ages at hospitalization in France of follow-up group in relation to condition in 1919-20

Age	Normal	Neurotic	Fatigued	Disabled	Psychotic	Totals
16.....	0	1	0	0	0	1
17.....	0	0	0	0	0	0
18.....	2	2	2	2	0	8
19.....	13	10	7	8	3	41
20.....	15	7	10	6	0	38
21.....	28	13	2	8	1	52
22.....	37	19	15	15	0	86
23.....	37	26	16	15	0	94
24.....	40	13	16	24	1	94
25.....	22	16	14	12	0	64
26.....	27	13	9	12	0	61
27.....	12	9	5	6	0	32
28.....	15	6	10	3	2	36
29.....	9	6	4	2	1	22
30.....	3	5	6	8	1	23
31.....	9	8	3	8	0	28
32.....	3	4	3	6	0	16
33.....	3	1	0	1	0	5
34.....	2	1	0	0	0	3
35.....	1	0	1	0	1	3
36.....	0	1	0	0	0	1
37.....		1		1		2
38.....				1		1
39.....		2				2
40.....			1	1		2
41.....	1					1
42.....						0
43.....						0
44.....	2					2
45.....	1		1	1		3
46.....		1				1
47.....						0
48.....						0
49.....						0
50 plus.....	1					1
N.....	= 283	165	125	140	10	723
Medians.....	= 24.25	24.38	23.69	24.69	26	24.46
Q.....	= 2.125		2.625		2.32	

(Median for total hospital group, 24.66 years.)

In so far as these data are significant, the factor of age enters but little in relation to the type of social readjustment of the Base Hospital No. 117 group of war neurotics in 1919-20. The median of the "fatigued" group is a little over one-half a year less than that of the "normal" group, and the median for the "disabled" group almost one-half a year above the "normal" group median. The median is 24.47 years for the combined "normal" and "neurotic" groups (that is, for those who were carrying on in civilian life in 1919-20) and 24.68 years for the combined "fatigued" and "disabled" groups. Thus, a comparison of medians indicates a slight tendency for younger men to be doing better in civil pursuits than the older men. When distributions for the groups are studied

from the standpoint of dispersion on the basis of the percentage of men 21 years of age and under, and the percentage of men 36 years of age and over in the various groupings of present condition, as Tables 15 and 16 show, there is also indication of a slight tendency for the younger men to be readapting themselves better than the older men.

TABLE 15.—*Distribution of cases within the normal, neurotic, fatigued, and disabled groups according to age*

Age	Normal		Neurotic		Fatigued		Disabled	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
21 years and younger.....	58	20.5	33	18.2	21	16.8	24	17.1
22 to 35 years (inclusive).....	220	77.8	127	78.8	102	81.6	112	80.7
36 years and older.....	5	1.7	5	3.0	2	1.6	4	2.2
Total.....	283	100	165	100	125	100	140	100

TABLE 16.—*Distribution of cases within each age group according to condition in 1919-20*

Condition	21 years and younger		22 to 35 years (inclusive)		36 years and older	
	Number	Per cent	Number	Per cent	Number	Per cent
Normal.....	58	42.7	220	39.2	5	31.25
Neurotic.....	33	24.3	127	22.7	5	31.25
Fatigued.....	21	15.4	102	18.2	2	12.5
Disabled.....	24	17.6	112	19.9	4	25
Total.....	136	100	561	100	16	100

PERSONAL AND FAMILY HISTORY (SEPARATELY AND COMBINED), PRIOR TO HOSPITALIZATION, RELATED TO CONDITION IN 1919-20

Often the opinion is expressed that those who, after the war, were not fully recovered from war neuroses were for the most part men of inferior stock and make-up. In other words, persistence of symptoms is supposed to be related primarily to neuropathic make-up. The accompanying data tend to confirm this opinion. In the matter of personal history prior to hospitalization as shown in Table 17, there are 56.4 per cent of those who are now normal who gave a negative history; 47.5 per cent of the neurotic group and 47.6 per cent of the fatigued group who were negative; and 45.4 per cent of the disabled group. For family history, likewise, the normal group has the highest percentage of negative cases; i. e., 52.8 per cent; the neurotic 46.8 per cent; fatigued 44.8 per cent; and disabled 45.5 per cent. When family and personal history are combined the same tendency is present; for Table 17 also shows that 42.2 per cent of the normal group, 31.2 per cent of the neurotic and of the disabled, 32.2 per cent of the fatigued group were negative. There is thus a definite tendency for those of good stock and make-up to readapt themselves better to civilian life than those in whom personal or familial taint is found; still, many war neurotics are now disabled who gave a good history, and a number are now carrying on who were of poor stock and make-up. Thus, evidently, according to these data, stock and make-up alone, though significant, do not afford a sufficient basis for the prognosis of civilian readaptation.

Table 18 shows that on the whole the follow-up group are an adequate sampling of the hospital group from the standpoints of family stock and personal make-up.

TABLE 17.—*Family and personal histories (positive and negative) in relation to condition in 1919-20, numbers and percentages*^a

	Family history				Personal history				Combined family and personal history			
	Positive		Negative		Positive		Negative		Positive		Negative	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Normal.....	127	47.2	142	52.8	117	43.6	151	56.4	159	57.8	116	42.2
Neurotic.....	84	53.2	74	46.8	82	52.5	74	47.5	110	68.8	50	31.2
Fatigued.....	69	55.2	56	44.8	65	52.4	59	47.6	84	67.8	40	32.2
Disabled.....	78	54.5	65	45.5	77	54.6	64	45.4	96	68.1	45	31.9
Total.....	358	51.5	337	48.5	341	49.5	348	50.5	449	64.1	251	35.9

^a Exclusive of psychotic cases, the number of which is too few (eight) for comparative purposes.

TABLE 18.—*Family and personal histories (positive and negative) of follow-up cases compared with 1,000 unselected cases from Base Hospital No. 117, numbers and percentages*

	Family history				Personal history				Combined family and personal history			
	Positive		Negative		Positive		Negative		Positive		Negative	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
One thousand unselected cases.....	508	50.2	505	49.8	527	51.9	488	48.1	643	63.5	370	36.5
Follow-up.....	358	51.5	337	48.5	341	49.5	348	50.5	449	64.1	251	35.9

SOCIAL STATUS IN RELATION TO PRESENT CONDITION

PRE-WAR OCCUPATION

The first question that arises regarding occupation is the adequacy of sampling of the follow-up group when compared with the total hospital service. Using the categories of the Bureau of the Census, the totals column of Table 19 shows that a somewhat greater proportion than the expected quota answered of those engaged in agricultural (15.5 per cent compared to 11.5 per cent) and professional work (10 per cent to 7.2 per cent) and that the proportion of replies from those engaged in trade (8.6 per cent to 11.1 per cent) and clerical work (12.7 per cent to 15.9 per cent) was slightly less than quota. On the whole, the sample was a representative one, for the other items used in the United States census, the differences were less than 1 per cent from expectation in terms of the total hospital group, namely, 2.2 per cent compared to 2.3 per cent; 33.3 per cent to 34.7 per cent; 13.5 per cent to 13.8 per cent; 2.1 per cent to 2 per cent; 2.1 per cent to 2.5 per cent.

TABLE 19.—*Relation of pre-war occupation^a to condition in 1919-20*

	Normal		Neurotic		Fatigued		Disabled		Psychotic		Total of follow-up		Total hospital service ^b	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent				
Agricultural.....	34	13.9	14	10.4	25	22.5	22	16.8	2	33.3	97	15.5	261	11.5
Mining.....	4	1.6	2	1.5	2	1.8	5	3.8	1	16.7	14	2.2	53	2.3
Manufacturing.....	79	32.3	51	37.8	35	31.5	43	32.8	1	16.7	209	33.3	789	34.7
Transportation.....	24	9.8	20	14.8	19	17.1	22	16.8	-----	-----	85	13.5	313	13.8
Trade.....	26	10.6	8	5.9	5	4.5	13	9.9	2	33.3	54	8.6	253	11.1
Public service.....	3	1.3	4	3.0	1	0.9	5	3.8	-----	-----	13	2.1	45	2.0
Professional.....	29	11.9	16	11.8	9	8.1	9	6.9	-----	-----	63	10.0	163	7.2
Domestic service.....	5	2.1	2	1.5	4	3.6	2	1.5	-----	-----	13	2.1	57	2.5
Clerical.....	41	16.5	18	13.3	11	9.9	10	7.6	-----	-----	80	12.7	339	15.9
Total.....	245	100.0	135	100.0	111	100.0	131	100.0	6	100.0	628	100.0	2,273	100.0

^a Exclusive of 51 who gave occupation "labor" and 42 who gave "student" (12.9 per cent).^b Exclusive of 293 classed as "labor" and 194 as "student" (15.5 per cent).TABLE 20.—*Relation of 1919-20 condition to pre-war occupation^a*

	Agricultural		Mining		Manufacturing		Transportation		Trade	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Normal.....	34	35.0	4	28.6	79	37.8	24	28.2	26	48.1
Neurotic.....	14	14.4	2	14.3	51	24.4	20	23.5	8	14.8
Fatigued.....	25	25.8	2	14.3	35	16.7	19	22.4	5	9.3
Disabled.....	22	22.7	5	35.6	43	20.6	22	25.9	13	24.1
Psychotic.....	2	2.1	1	7.2	1	0.5	-----	-----	2	3.7
Total.....	97	100.0	14	100.0	209	100.0	85	100.0	54	100.0

	Public service		Professional		Domestic service		Clerical	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Normal.....	3	23.0	29	46.0	5	38.4	41	51.2
Neurotic.....	4	30.8	16	25.4	2	15.4	18	22.5
Fatigued.....	1	7.7	9	14.3	4	30.8	11	13.8
Disabled.....	5	38.5	9	14.3	2	15.4	10	12.5
Total.....	13	100.0	63	100.0	13	100.0	80	100.0

^a Exclusive of 51 who gave occupation "labor" and 42 who gave "student" (12.9 per cent).TABLE 21.—*Rank order of percentage of men of each occupation of the 1919-20 follow-up group now able to work^a*

Rank order	Occupation	Number	Per cent	Rank order	Occupation	Number	Per cent
1	Clerical.....	80	73.7	5½	Domestic.....	13	53.8
2	Professional.....	63	71.4	7	Transportation.....	85	51.7
3	Trade.....	54	62.9	8	Agriculture.....	97	49.4
4	Manufacturing.....	209	62.2	9	Mining.....	14	42.9
5½	Public service.....	13	53.8				

^a Combined "normal" and "neurotic" groups in Table 19.

Tables 19 and 20 bring out the general facts of tendency. The significance of the data is conclusively shown in Table 21 which gives the rank order of the percentages of men in various occupations now able to carry on. The ranks are arrived at by adding together the percentages of "normal" and "neurotic" for each occupational group as given in Table 20. With the exception of mining

(N-14) and domestic and public service (N-13 in both), the groups are all large enough to draw significant comparisons. From these figures it is evident that the clerical and professional groups are making the best readjustment of all the occupational groups. Trade and the mechanical and manufacturing trades come next, and at the bottom are transportation, agriculture, and mining. Lastly, it is to be noted that, in general, men from the higher types of occupations, those requiring somewhat more intelligence for performance, are in better shape proportionately than men from some of these occupations demanding less intelligence for successful participation.

COMPARATIVE FIGURES FOR THE 1919-20 CONDITION OF THE GROUP AS A WHOLE RELATED TO THEIR CONDITION AT DISCHARGE FROM BASE HOSPITAL No. 117

In comparing the civilian value of this group of men in terms of our categories of readjustment, with their military worth based upon the hospital's classification, an estimate is obtained of the social value of the group of men reached in the follow-up in two different social situations; first, the Army at war and during an armistice, and second, civilian life in America in 1919-20. Tendencies regarding these facts may be noted by comparing those classified A upon discharge with those now reporting themselves "normal," the B class with the "neurotic," C class with "fatigued," and D and T combined with "disabled" and "psychotic" combined. Furthermore, the class A and class B groups may be combined and compared with the "normal" and "neurotic" figures.

Table 22 gives us a summary of the 1919-20 condition of members of the group on whom we have data. Practically 61 per cent, the combined "normal" and "neurotic" groups of the men located in 1919-20, were self-supporting in civil life or sufficiently strong and well to be on active duty in the Army or to be attending school or college. Of this 61 per cent, there were 22 per cent in the "neurotic" group who were able to support themselves, though, from a health standpoint, they were by no means well. The remaining 39 per cent in the "fatigued," "disabled," and "psychotic" groups were either in hospitals when last heard from or were having difficulties of various sorts. The "fatigued" group were the only ones of those last mentioned who were able to work at all, and they could work, on the average, only two or three days a week.

Table 22 is, in effect, a comparison of the military classification of usefulness to an army of a group of neurotics, as a group, with their civilian value in terms of usefulness to society and to themselves a year or so later, after returning home. It is a striking fact to be gathered from the table that whereas there are almost twice as many of the follow-up group proportionately who are "normal" and of full usefulness in civil life as there were those who were class A and presumably of full use to the Army, still, when one gets the sum of percentages of those of full use (class A) and of prospective full use (class B) and compare with it the sum of those "normal" and those "neurotic," the figures are practically identical (i. e., 61.4 per cent as compared to 60.9 per cent). There are about the same proportions who are now (1919-20) partially or wholly disabled, and drags on society, as there were of men who were almost, or actually, useless for combat service.

TABLE 22.—*Comparison of physical classification in the American Expeditionary Forces and the 1919-20 condition of the follow-up group, arranged so as to show cases discharged from hospital before the armistice (upper figures of each group) and during the armistice (lower figures of each group)*

Physical classification	Number	Per cent	1919-20 condition of follow-up group	Number	Per cent
A.....	36	8.2	Normal.....	171	39.0
	152	47.6		124	38.7
	188	24.8		295	38.9
B.....	219	47.9	Neurotic.....	98	22.4
	68	21.0		69	21.5
	278	36.6		167	22.0
C.....	171	39.0	Fatigued.....	67	15.3
	51	15.4		64	20.0
	222	29.3		131	17.3
D (and unclassified).....	11	4.8	Disabled, psychotic.....	102	22.3
	46	15.4		63	19.6
	57	9.3		165	21.7

When individual items in Table 22 are compared, though the same tendencies hold, the discrepancies are greater. For instance, the proportion of class A of the prearmistice group compared with the proportion of "normal" of the prearmistice group gives 8.2 per cent class A and 39.0 per cent "normal." On the contrary, for the armistice group there are 47.6 per cent class A and only 38.7 per cent "normal." In class B, the figures are reversed, the "neurotic" group of the prearmistice discharge from the hospital contain 22 per cent of the cases whereas class B comprised 47.9 per cent of those discharged before the armistice; the percentages of class B and "neurotic" are identical for the armistice group. And the proportions of Army and civilian disabled in the two groups for the armistice group are practically identical.

A general conclusion which may be drawn from the above facts is: When the civilian status of an unselected group of 800 war neurotics returned to civilian life, is estimated in 1919-20 with the five categories used here, "normal," "neurotic," etc., and the proportions of each status compared with the estimates of Army usefulness (military physical classification) made in France in 1918, we find that although there is a tendency for a greater proportion to be first-rate citizens (normal) than first-rate front-line material (class A), still, by and large, the group is as great a weight upon society ^b as it was upon the Army in war times in France.

At first sight, for 39 per cent of a hospital's service to be disabled in later life would seem to be a very high figure. And, indeed, in the case of an ordinary hospital, it would be so. For if, of every 100 adults who were in a hospital for operations and diseases during 1918, two-fifths were still to be disabled, healthy and fit men would be at a premium. These figures loom large for the

^b In attempted explanation of the serious carry-over of symptoms by the men of the follow up, it is necessary to include, of course, a consideration of the significance of the pension issue in relation to present condition. Psychoneurotics are liable to be seriously influenced by factors related to Government compensation. An estimate of the relationship between the present condition of the former patients of Base Hospital No. 117 and exaggerated desire for Government aid is extremely difficult of definition and beyond the scope of this study.

Base Hospital No. 117 service, but small in terms of the total American Expeditionary Forces cases. The Base Hospital No. 117 admissions were of two strains: First, more or less "chronic" cases sent from other nonpsychiatric hospitals in France; and second, cases from the advanced neurological hospitals. The former cases were usually inadequately treated in some way or other, with consequent fixation of symptoms. Of the latter we have more definite knowledge. They represent approximately 15 per cent (the severe, resistive cases) of the total neuroses so classified during the St. Mihiel and Meuse-Argonne operations. For every 100 war neurosis cases which developed during the St. Mihiel and Meuse-Argonne operations, 15 were sent from the forward area hospitals to Base Hospital No. 117. If now, of those 15, two-fifths are disabled, it means that at least 6 out of every 100 cases developed during this period referred to were unable to carry on in civil life in 1919-20.

It is a fair statement to make that the cases discharged from the forward area hospitals as class A, and ready to return to the front, which amounted to 85 out of every 100, would be probably much superior in potential civilian well-being to the class A patients of Base Hospital No. 117. Therefore since 67 per cent of the A cases at Base Hospital No. 117 are now carrying on in civilian life, it follows, if our premise is adequate, that at least two-thirds, or 57 of the 85 admitted to these forward-area hospitals and sent out class A, would be carrying on in civil life. Our estimates, therefore, would be that of 100 cases of war neuroses which developed at the front, at least 57 of the advanced hospital service, and 9 more of those sent from this service to Base Hospital No. 117, or 66 in all, are now carrying on in civil life. The probability which may be sustained by future research is that when the war neuroses were handled by specialists at the front the percentage of cure and of later civilian readjustment is much greater than is found here to be the case for the Base Hospital No. 117 service, where some of the men were hospitalized elsewhere before admission, and those from the special service at the front were especially severe cases and evacuated to the rear for that purpose.

THE 1924-25 STUDY

The purpose of this study was identical to that of the 1919-20 study described above.

Table 23 is concerned with the problem of the adequacy of sampling of the follow-up group as compared with the total hospital group from the standpoint of physical classification. The selection of cases of the follow up is in general a good one from the standpoint of physical classification. While there are variations in the relative size of prearmistice and armistice figures, yet the totals of prearmistice and armistice cases for each classification are usually close in both sets of data. For example, the totals of class A are 23.5 per cent for the follow-up group and 19.6 per cent for the total hospital group,

for class B, 39.2 per cent and 39.1 per cent, respectively, class C, 29.3 and 31.8 per cent, class D, 5.9 per cent and 6.6 per cent, etc. (Table 24.) For the total groups likewise the prearmistice and armistice selections are good samplings (60.5 per cent of the follow up are prearmistice, compared to 56.3 per cent of the total hospital group and 39.5 per cent are armistice compared with 43.3 per cent of the total hospital group). Thus, the 1924-25 follow-up group are a representative sampling of the hospital's service from the standpoint of physical classification.

TABLE 23.—Comparison of the 1924-25 follow-up group and the total Base Hospital No. 117 service in regard to physical classification ^a

Physical classification	Totals for follow up		Total for hospital		Physical classification	Totals for follow up		Total for hospital	
	Number	Per cent	Number	Per cent		Number	Per cent	Number	Per cent
A-----	35	7.6	142	9.7	D-----	8	1.7	32	2.2
	154	51.1	366	32.6		36	12.0	139	12.4
	189	23.5	508	19.6		44	5.9	171	6.6
B-----	241	52.1	696	47.4	T ^b -----	6	1.3	48	3.3
	58	19.2	316	28.1		2	0.7	27	2.4
	299	39.2	1,012	39.2		8	1.5	75	2.9
C-----	172	37.2	548	37.4	Totals-----	462	60.5	1,466	56.3
	51	16.9	276	24.6		301	39.5	1,124	43.7
	223	29.3	824	31.8		763	100.0	2,590	100.0

^a In each group of figures, the upper figure indicates cases discharged before the armistice, the lower, cases discharged during the armistice, the figures below the line, total.

^b T^b=cases transferred to another hospital, unclassified.

From Table 24 we are able to determine the prognostic value of physical classification for civilian readjustment in 1924-25. Although in a period of seven years there have been many ups and downs, fortunate events, and also difficulties and discouragements, to change the mood and outlook of these men, we still find a positive correlation between physical classification and civilian readjustment, despite all the circumstances that would enter to impair such a relationship. In the column for class A we now note 83 per cent carrying on (40.7 per cent normal, 42.3 per cent neurotic); of class B, 85.9 per cent are carrying on (39.1 per cent normal, 46.8 per cent neurotic); of class C, 73.9 per cent are carrying on (30 per cent normal, 43.9 per cent neurotic); of class D, 72.7 per cent are carrying on (40.9 per cent normal, 31.8 per cent neurotic). Members of class B, as a group, are adjusting themselves better to civilian life than class A. Though a slightly smaller per cent of class B are normal, the 4.5 per cent greater number of class B now neurotic makes the total of men able to carry on (i. e., either normal or neurotic) for class B 2.9 per cent greater than for class A. Class C and class D are smaller in percentage of recoveries than class A and class B. Thus, the hospital estimates of potential military value are again found to be of some significance for the group as a whole as prophecy of future civilian readjustment.

TABLE 24.—Physical classification of 1924–25 follow-up group in relation to condition in 1924–25 ^a

	Class A		Class B		Class C		Class D		T ^b		Totals	
	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent
Normal.....	18	51.4	94	39.0	48	27.9	2	25.0	2	33.3	164	35.5
	59	38.3	23	39.7	19	37.2	16	44.4	0	0.0	117	38.9
	77	40.7	117	39.1	67	30.0	18	40.9	2	25.0	281	36.9
Neurotic.....	11	31.4	113	46.9	79	45.9	3	37.5	2	33.3	208	45.0
	69	44.8	27	46.5	19	37.2	11	30.5	1	50.0	127	42.2
	80	42.3	140	46.8	98	43.9	14	31.8	3	37.5	335	43.9
Fatigued.....	3	8.6	20	8.2	27	15.7	1	12.5	2	33.3	53	11.5
	15	9.8	4	6.8	2	4.0	1	2.8	0	0.0	22	7.3
	18	9.5	24	8.0	29	13.0	2	4.6	2	25.0	75	9.8
Disabled.....	3	8.6	12	4.9	17	9.9	0	0.0	0	0.0	32	6.9
	6	3.9	3	5.2	9	17.6	8	22.2	1	50.0	27	8.9
	9	4.7	15	5.0	26	11.7	8	18.2	1	12.5	59	7.7
Psychotic.....	0	0.0	2	0.0	1	0.6	2	25.0	-----	-----	5	1.1
	5	3.2	1	1.7	2	4.0	0	0.0	-----	-----	8	2.7
	5	2.6	3	1.0	3	1.4	2	4.6	-----	-----	13	1.7
Totals.....	35	100.0	241	100.0	172	100.0	8	100.0	6	100.0	462	100.0
	154	100.0	58	100.0	51	100.0	36	100.0	2	100.0	301	100.0
	189	100.0	299	100.0	223	100.0	44	100.0	8	100.0	763	100.0

^a The upper number in each group indicates cases discharged from Base Hospital No. 117 before the armistice; the second number, cases discharged during the armistice; and the number below the line, the total.
^b T = Cases transferred to another hospital, unclassified.

DIAGNOSIS IN FRANCE IN RELATION TO CONDITION IN 1924–25

In attempting to learn what relationships prevailed in 1924–25 between the various diagnostic groups and civilian readjustment, our first question again is concerned with the selection of cases. Table 25 gives the frequency of usage of the various diagnoses in the total hospital service, with their occurrence in the follow-up of 1924–25. It shows that the follow-up group is a good sampling of the total hospital service from the standpoint of diagnosis; for example, the percentage of cases of hysteria in the follow-up is 27 and in the total hospital group 27.6. Concussion neurosis is even closer to exactness, 22.2 per cent of the follow up and 22.1 per cent of the total hospital group; neurasthenia is 12.5 per cent of the follow-up and 12.1 per cent of the total hospital service.

Table 26 gives the relationship of diagnosis to present condition; the psychotics are combined with the disabled group. Some of the diagnostic groups are small, yet since this smallness is representative of their actual proportional number, their inclusion is desirable. If we combine for each diagnosis the normal and neurotic groups (that is, the patients who were self-supporting in civilian life in 1924–25) and compare the various diagnoses on the basis of percentage carrying on and percentage unable to carry on (fatigued, disabled, or psychotic) significant features of the data are brought to light. In Table 27 the various diagnoses are ranked on the basis of the percentage of those reached in 1924–25 who were carrying on in civilian life.

TABLE 25.—Comparison of the 1924-25 follow-up group and the total population of Base Hospital No. 117 in regard to diagnosis

Diagnosis	Totals for follow-up	Totals for hospital group	Per cent of follow-up	Per cent of hospital group	Diagnosis	Totals for follow-up	Totals for hospital group	Per cent of follow-up	Per cent of hospital group
Hysteria.....	119 87 206	379 338 717	25.8 28.9 27.0	25.9 30.1 27.6	Psychasthenia.....	7 3 10	28 12 40	1.5 1.0 1.3	1.9 1.1 1.6
Concussion neurosis.....	93 77 170	326 247 573	20.2 25.6 22.2	22.2 22.0 22.1	Timorousness (state of anxiety).....	10 5 15	20 33 53	2.1 1.6 1.9	1.4 2.9 2.0
Neurasthenia.....	56 39 95	187 127 314	12.1 13.0 12.5	12.8 11.3 12.1	Anticipation neurosis.....	6 0 6	22 7 29	1.3 0.0 0.8	1.5 0.6 1.1
Hypochondriasis.....	10 12 22	58 39 97	2.1 4.0 2.9	3.9 3.4 3.8	Gas neurosis.....	10 9 19	21 30 51	2.1 3.0 2.5	1.4 2.7 1.9
Exhaustion.....	31 19 50	72 67 139	6.7 6.3 6.6	4.9 5.9 5.4	Gas syndrome ^a	5 2 7	3 8 11	1.1 0.7 0.9	0.2 0.7 0.4
Effort syndrome.....	9 2 11	28 29 57	1.9 0.7 1.4	1.9 2.6 2.2	Traumatic neurosis.....	3 4 7	4 4 8	0.7 0.7 0.9	0.3 0.1 0.4
Anxiety neurosis.....	40 12 52	118 56 174	8.7 4.0 6.9	8.1 4.9 6.7	Gastric neurosis, postoperative.....	1 4 5	1 5 6	0.3 0.5 0.5	0.1 0.2 0.2
Concussion syndrome.....	61 20 81	181 77 258	13.2 6.6 10.6	12.4 6.9 10.0	No disease.....	2 13 15	19 53 72	0.4 4.3 1.9	1.2 4.7 2.8
					Totals.....	462 301 763	1,466 1,124 2,590	100.0 100.0 100.0	100.0 100.0 100.0

(The upper number in each group indicates the cases discharged from Base Hospital No. 117 before the armistice, the second, cases discharged during the armistice, and the number below the line, the total.)

^a The discrepancy in total hospital and follow-up statistics is due to the fact that gas syndrome was used a few times as subsidiary diagnosis.

Again the typical war neurosis, such as gas syndrome, exhaustion, concussion, anxiety, show the best recovery, except for gas neurosis (N-19); whereas the more pronounced constitutional types (neurasthenia, psychasthenia, effort syndrome) rank lower. There are, as one might expect, some significant changes in rank among the 1924-25 group as compared with the 1919-20 group (given in Table 13); for example, exhaustion neurosis goes from rank 7 to rank 2, with 48 of the 50 men, or 96 per cent, carrying on. In this connection, it is surprising, in view of the nature of their difficulties in France, that they did not rank higher in 1919-20; however, the fact that by now 48 out of 50 of them have been able to return to the position of being self-supporting is a significant proof of diagnosis exactitude in the hospital service. Likewise, that the concussion and anxiety cases have made a good readaptation is a justification of their diagnosis and the general opinion of their condition held by the Base Hospital No. 117 staff in France. On the other hand, that the effort syndrome group is still in difficulty was well nigh predictable, as functional heart conditions are liable to chronicity. Hypochondriasis, neurasthenia, psychasthenia, are about at the relative rank predicted by the

medical experts of the hospital. The best insight into the meaning of war-time diagnosis is found by comparing the percentage of recovery in 1924-25 from Table 27 with the same facts for 1919-20 in Table 13. At once it is apparent that practically all of the diagnostic groups show a higher percentage of readaptation at the later date. Gas neurosis, no disease, and effort syndrome have not shown an improvement from a percentage standpoint. Only anticipation neurosis (which forms a small group of six cases) has shown a decrease in percentage of men with that diagnosis able to carry on.

TABLE 26.—*Condition in 1924-25 in relation to diagnosis in France*

	Normal		Neurotic		Fatigued		Disabled and psychotic		Totals	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Hysteria.....	32 33	19.6 28.1	60 33	29.0 25.9	15 8	28.9 36.4	12 13	32.4 38.2	119 87	25.9 29.0
	65	23.2	93	27.9	23	31.1	25	35.2	206	27.1
Concussion neurosis.....	42 31	25.8 26.4	39 35	18.9 27.8	10 6	19.2 27.3	2 5	5.4 14.7	93 77	20.3 25.7
	73	26.0	74	22.1	16	21.6	7	9.8	170	22.4
Neurasthenia.....	16 13	9.8 11.1	26 18	12.6 14.1	8 2	15.4 9.1	6 6	16.2 17.7	56 39	12.2 13.0
	29	10.4	44	13.2	10	13.5	12	16.9	95	12.5
Concussion syndrome.....	20 6	12.3 5.1	28 12	13.5 9.4	9 0	17.3 0.0	4 2	10.8 5.9	61 20	13.4 6.7
	26	9.3	40	11.9	9	12.2	6	8.3	81	10.7
Anxiety neurosis.....	19 5	11.5 4.2	17 3	8.2 2.3	1 2	1.9 9.1	3 2	8.1 5.9	40 12	8.3 4.0
	24	8.6	20	6.0	3	4.1	5	7.0	52	6.9
Exhaustion neurosis.....	16 11	9.8 9.3	13 8	6.3 6.3	2 0	3.9 0.0	----- -----	----- -----	31 19	6.8 6.3
	27	9.6	21	6.3	2	2.7	-----	-----	50	6.6
Hypochondriasis.....	0 3	0.0 2.5	8 6	3.0 4.7	----- -----	----- -----	2 3	5.4 8.8	10 12	2.2 4.0
	3	1.1	14	4.2	-----	-----	5	7.0	22	2.9
Psychasthenia.....	3 2	1.8 1.6	1 1	.5 .8	1 0	1.9 0.0	2 0	5.4 0.0	7 3	1.5 1.0
	5	1.8	2	.6	1	1.3	2	2.9	10	1.3
Gas neurosis.....	3 4	1.8 3.3	4 3	1.9 2.3	1 0	1.9 0.0	2 2	5.4 5.9	10 9	2.2 3.0
	7	2.5	7	2.1	1	1.3	4	5.8	19	2.5
Anticipation neurosis.....	3 0	1.8 0.9	1 0	.5 0.0	1 0	1.9 0.0	1 0	2.7 0.0	6 0	1.3 0.0
	3	1.1	1	0.3	1	1.3	1	1.4	6	0.8
Effort syndrome.....	2 1	1.2 2.5	3 0	1.4 0.0	1 1	1.9 4.5	3 0	8.2 0.0	9 2	1.9 0.7
	3	1.1	3	0.9	2	2.7	3	4.3	11	1.5
Timorousness.....	5 3	3.1 1.7	3 1	1.4 0.8	2 0	3.8 0.0	0 1	0.0 5.9	10 5	2.2 1.7
	8	2.8	4	1.2	2	2.7	1	1.4	15	1.9
Gas syndrome.....	2 1	1.2 0.9	3 1	1.4 0.8	----- -----	----- -----	----- -----	----- -----	5 2	1.1 0.7
	3	1.1	4	1.2	-----	-----	-----	-----	7	0.9
No disease.....	0 4	0.0 3.4	1 6	.5 4.7	1 3	1.9 13.6	----- -----	----- -----	2 13	0.4 4.3
	4	1.4	7	2.1	4	5.5	-----	-----	15	1.9

(The upper number in each group indicates the cases discharged from Base Hospital No. 117 before the armistice, the lower, cases discharged during the armistice, and the number below the line, the total.)

TABLE 27.—*Rank order of diagnoses on the basis of the percentage of those carrying on^a in civilian life in 1924-25*

Rank	Diagnosis	Per cent	Rank	Diagnosis	Per cent
1	Gas syndrome.....	100.0 (N-7)	8	Neurasthenia.....	76.8 (N-95)
2	Exhaustion neurosis.....	96.0 (N-50)	9	Hysteria.....	76.7 (N-206)
3	Concussion neurosis.....	86.5 (N-170)	10	Gas neurosis.....	73.6 (N-19)
4	Anxiety neurosis.....	84.6 (N-52)	11	No disease.....	73.3 (N-15)
5	Concussion syndrome.....	81.5 (N-81)	12	Psychasthenia.....	70.0 (N-10)
6	Timorousness.....	80.0 (N-15)	13	Anticipation.....	66.7 (N-6)
7	Hypochondriasis.....	77.2 (N-22)	14	Effort syndrome.....	54.4 (N-11)

^a See p. 456 for comparative figures of 1919 follow-up group.

PHYSICAL AND MENTAL CONSIDERATIONS IN RELATION TO CONDITIONS IN 1924-25

AGE

In getting data on age, the men were asked for their ages directly in the questionnaire sent to each, instead of using the age at time of hospitalization. Thus the median age at the time of hospitalization would have to be increased by six years to make it comparable with the median for the age of the group reached in the summer of 1924, which is on the average six years after hospitalization. The two medians are then quite similar—30.66 years for total hospital group, 30.39 years for this follow-up. (Table 28.)

As far as the factor of age enters to explain readjustment in 1924-25, there does seem to be a tendency for the extremes of the distribution to be less well readapted than the more central groups. In Table 29, the figures show that there is a higher percentage of cases in the fatigued and disabled groups at the extreme ages than in the middle ranges. Likewise, in Table 30, the percentages of cases having difficulties is higher at the extreme ages than in the middle range of ages, i. e., from 28 to 35. There is thus a tendency for the extreme age groups, the younger and the older men, to be making poorer readaptations than the men of the middle range of ages.

TABLE 28.—*Ages of follow-up groups in relation to condition in 1924-25*

Age	Normal	Neurotic	Fatigued	Disabled	Psychotic	Totals
22.....	1	1		1		3
23.....	1	2	1			4
24.....	7	12	1			20
25.....	9	18	5	6		38
26.....	21	20	9	6	1	57
27.....	21	21	7	4		53
28.....	33	52	8	3	1	97
29.....	34	46	20	9	2	111
30.....	35	34	8	6	3	86
31.....	21	26	4	5		56
32.....	24	34	6	3		67
33.....	19	19	4	3	1	46
34.....	8	20	4	4	1	37
35.....	11	12	2	2	1	28
36.....	14	8	7	4		33
37.....	5	9	2	2		18
38.....	2	2	2	2	1	9
39.....	2	2	1	1		5
40.....		2	1	1		4
41.....	4	1				5
42.....	1		1			2
43.....		1				1
44.....		1	1			1
45.....		1				2
46.....						
47.....	2					2
48.....						
49.....						
50 and over.....	5	3				8
N.....	280	347	93	62	11	793
Median.....	30.39	39.06	29.80	30.58	30.67	30.93

TABLE 29.—*Distribution of cases within the normal, neurotic, fatigued, and disabled groups, according to age*

Age	Normal		Neurotic		Fatigued		Disabled	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
27 years and younger.....	60	21.4	74	21.3	23	24.7	17	27.4
28 to 35 years (inclusive).....	185	66.1	243	70.0	56	60.2	35	56.3
36 years and older.....	35	12.5	30	8.7	14	15.1	10	16.3
Totals.....	280	100.0	347	100.0	93	100.0	62	100.0

TABLE 30.—*Distribution of cases within each age group according to condition in 1924-25*

Condition	27 years and younger		28 to 35 years (inclusive)		36 years and older	
	Number	Per cent	Number	Per cent	Number	Per cent
Normal.....	60	34.5	185	35.7	35	39.2
Neurotic.....	74	42.5	243	46.8	30	33.7
Fatigued.....	23	13.2	56	10.8	14	15.7
Disabled.....	17	9.8	35	6.7	10	11.3
Total.....	174	100.0	519	100.0	89	100.0

FAMILY AND PERSONAL HISTORY (SEPARATELY AND COMBINED), PRIOR TO HOSPITALIZATION, RELATED TO CONDITION IN 1924-25

The data in Table 31 indicate that, in so far as they apply to this group, previous family and personal histories are not in themselves very significant determiners for present condition. In fact the group now classed as normal herein gives a poorer personal history than the neurotics, and a poorer combined personal and family history than the neurotics and fatigued. Of course, not all the cases are included, as the data were missing on some cases from the clinical histories written in France. Furthermore, all data on family and personal history are apt to be unreliable unless collected for specific purposes and under definite directions, which is in many cases not true of these data. But from the data available family and personal histories, as previously shown in the 1919-20 study, are not very significant in themselves in relation to civilian readaptation. Whereas in the 1919-20 group a slight tendency existed for a better readjustment to be made by those giving negative histories, by 1924, this tendency has decreased almost to insignificance.

Table 32 shows that on the whole the follow-up group are an adequate sampling of the hospital group from the standpoint of family stock and personal make-up.

TABLE 31.—*Family and personal histories in relation to condition in 1924-25*

	Family history				Personal history				Combined family and personal history			
	Positive		Negative		Positive		Negative		Positive		Negative	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per- cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Normal.....	128	56.6	98	43.4	112	51.6	105	48.4	149	68.0	70	32.0
Neurotic.....	141	53.0	125	47.0	124	47.1	139	52.9	163	62.4	98	37.6
Fatigued.....	36	58.1	26	41.9	64	52.5	58	47.5	81	67.9	38	32.1
Disabled.....	21	42.0	29	58.0	24	52.2	22	47.8	32	68.1	15	31.9
Total.....	326	53.9	278	46.1	324	50.0	324	50.0	425	65.8	221	34.2

TABLE 32.—*The follow-up cases (1924-25) compared with 1,000 unselected cases from Base Hospital No. 117*

	Family history				Personal history				Combined family and personal history			
	Positive		Negative		Positive		Negative		Positive		Negative	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per- cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Total Base Hospital No. 117 patients.....	508	50.2	505	49.8	527	51.9	488	48.1	643	63.5	370	36.5
Follow-up group.....	326	53.9	278	46.1	324	50.0	324	50.0	425	65.8	221	34.2

Lastly, it is a rather interesting commentary on the whole conception of "neuropathic" taint that there are so many men (over four-fifths) now able to carry on in this group of men, and (by comparison with the findings in 1919-20, which was about three-fifths) an increasing number and proportion who give a neuropathic (i. e., war neurotic) history. Smith and Pear³ have expressed very well the looseness and inadequacy of all explanation of nervous or mental disease in terms of so-called "neuropathic" taint. It is noteworthy that this group shows no very significant relationship between these factors of make-up and the capacity of readaptation to civilian environment.

SOCIAL STATUS IN RELATION TO PRESENT CONDITION

PRESENT OCCUPATION

Again the adequacy of sampling of the follow-up compared to the hospital service is important. It must be realized at once that when only the present occupation is considered, the psychotic and disabled patients will automatically be excluded, for they are not at work. Likewise many of those reported at work were doing things described in a way difficult to allocate with the Bureau of the Census categories. Taking the 562 cases which remain in the 3 groups, and comparing them with the proportions of the total hospital group, we find (in Table 33) that the sampling is a selected one in the divisions of transportation (7.7 per cent of this follow-up group instead of 13.8 per cent in the total hospital figures), trade (18.1 per cent instead of 11.1 per cent), public service (5.5 per cent instead of 2 per cent), clerical work (11.2 per cent instead of 15.9 per cent), though upon inspection of the other categories (agriculture, mining, manufacturing, professional) it is noted that the sampling is a good one.

TABLE 33.—*Relation of occupation ^a (1924-25) of follow-up group and total patients of Base Hospital No. 117 to working capacity*

	Normal		Neurotic		Fatigued		Total of follow-up ^b		Total of hospital service	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Agriculture.....	9	3.7	49	17.0	10	32.3	68	12.1	261	11.5
Mining.....	9	3.7	4	1.4	10	32.3	13	2.3	53	2.3
Manufacturing.....	79	32.5	4	32.9	10	32.3	184	32.8	789	34.7
Transportation.....	16	6.6	95	8.7	2	6.4	43	7.7	313	13.8
Trade.....	51	20.9	49	17.0	2	6.4	102	18.1	253	11.1
Public service.....	16	6.6	14	4.9	1	3.2	31	5.5	45	2.0
Professional.....	23	9.5	13	4.5	1	3.2	36	6.4	163	7.2
Domestic service.....	10	4.1	7	2.4	5	16.1	22	3.9	57	2.5
Clerical.....	30	12.4	132	11.1	1	3.2	63	11.2	339	15.9
Total.....	243	100.0	288	100.0	31	100.0	562	100.0	2,273	100.0

^a Exclusive of those who were "disabled" or psychotic at time of writing, who were by definition out of work.^b Exclusive of 293 classified as "labor" and 194 as "student" (15.50 per cent).

Tables 34, 35, and 36, give the facts of occupation related to present condition in the Bureau of the Census categories of general types of work. Again, as in the 1919-20 followup (i. e., Tables 19, 20, and 21), those engaged in agricultural work and those in transportation are making the poorest readaptation. Mining is too small a group (N-13) to be significant, but those reporting show the highest percentage as normal. The professional group are making the next best readaptation. Then come public service and trade, then manufacturing, transportation, and last of all agriculture. These facts are given in a rank-order presentation in Tables 35 and 36. In Table 36 the same facts are given for those now reporting themselves as neurotic or fatigued. The percentages are of course the complement of those in Table 35, since the two tables include the total number of men now at work in each occupation.

TABLE 34.—*Relation of condition in 1924-25 to occupation in 1924-25*

	Agriculture		Mining		Manufacturing		Transportation		Trade		Public service		Professional		Domestic service		Clerical	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Normal.....	9	13.2	9	69.2	79	42.2	16	37.2	51	50	16	51.6	23	63.9	10	45.4	30	47.6
Neurotic.....	49	72.1	4	30.8	95	51.5	25	58.1	49	48	14	45.1	13	36.1	7	31.8	32	50.8
Fatigued.....	10	14.7	1	7.0	10	5.4	2	4.7	2	2	1	3.2	1	2.8	5	22.7	1	1.6
Total.....	68	100.0	13	100.0	184	100.0	43	100.0	102	100	31	100.0	36	100.0	22	100.0	63	100.0

TABLE 35.—*Rank order of percentage of men of each occupation of the 1924-25 follow-up group now normal*

Rank order	Occupation	Number	Per cent	Rank order	Occupation	Number	Per cent
1	Mining.....	13	69.2	6	Domestic service.....	22	45.4
2	Professional.....	36	63.9	7	Manufacturing.....	184	42.2
3	Public service.....	31	51.6	8	Transportation.....	43	37.2
4	Trade.....	102	50.0	9	Agriculture.....	68	13.2
5	Clerical.....	63	47.6				

TABLE 36.—Rank order of percentage of men of each occupation of the 1924-25 follow-up group now either neurotic or fatigued

Rank order	Occupation	Number	Per cent	Rank order	Occupation	Number	Per cent
1	Agriculture.....	68	86.8	6	Trade.....	102	50.0
2	Transportation.....	43	62.8	7	Public service.....	31	48.4
3	Manufacturing.....	184	57.8	8	Professional.....	36	36.1
4	Domestic service.....	22	54.6	9	Mining.....	13	30.8
5	Clerical.....	63	52.4				

Since our comparison in Tables 35 and 36 is practically between the normal and the neurotic group (there are so few cases comparatively in the fatigued group), we also get a suggested estimate of what line of work a former war neurotic is now able to engage in as a normal healthy person, and in what general kinds of work he is able to carry on though still somewhat more nervous and unhealthy than the ordinary workman in that line of work, so far as we know. This last might suggest an answer to the question: In what lines of work can a psychoneurotic, still suffering from mild but quite annoying symptoms, be able to get along and be independent? The answer is agriculture far above all others, then transportation, clerical work, trade and the various lines of manufacturing. It is noteworthy in this connection that the histories of some of the men are in line with this. Many who had difficulty working at manufacturing trades in towns or cities have been able to make a fairly successful readaptation in agricultural work. Some have even so improved as to be entirely self-supporting and gradually losing all their symptoms.

PRESENT CONDITION OF THE GROUP AS A WHOLE

The five years intervening since 1919-20 saw the development of good improvement in the Base Hospital No. 117 group. Whereas in 1919 the percentage of those reached who were able to carry on (that is, normal or neurotic), was only 60.9; by 1924-25 this had grown to 80.8 as shown in Table 37. The fatigued group who were able to work but half the time amounted to 9.8 per cent as compared with 17.3 per cent in 1919-20, and the disabled or psychotic who were practically unable to work at all, amounted to 9.4 per cent instead of 21.7 per cent in the previous study.

When further comparison is made of the military value and civilian usefulness of these men, we find 62.7 per cent of good actual or potential military value (classes A and B) and 80.8 per cent of good civilian usefulness (normal and neurotic). There is a greater proportion (36.9 per cent) who are of full value as civilians (normal) than who were immediate front-line material (23.5 per cent) in France (class A) but almost equal proportions (38.2 per cent) of potential front-line material (class B and somewhat nervous individuals (neurotic) of not quite full civilian efficiency (43.9 per cent). The 1924-25 follow-up group is of much more usefulness to society now than they were to the Army at the time of discharge from the hospital. This is a very significant improvement over the conditions in 1919-20 of a similar-sized group of war neurotics reached at that time who were as much a burden to society as they were to the American Expeditionary Forces.

TABLE 37.—Direct comparison of physical classification in France and condition in 1924-25 of the follow-up group

Classification	Military classification		Classification	Present condition	
	Number	Per cent		Number	Per cent
A.....	35	7.6	Normal.....	164	35.5
	154	51.1		117	38.9
	189	23.5		281	36.9
B.....	241	52.1	Neurotic.....	208	45.0
	58	19.2		127	42.2
	299	39.2		335	43.9
C.....	172	37.2	Fatigued.....	53	11.5
	51	16.9		22	7.3
	223	29.3		75	9.8
D and T.....	14	3.0	Disabled, psychotic.....	37	8.0
	38	12.7		35	11.6
	52	7.4		72	9.4

(The upper number in each group indicates the cases discharged from Base Hospital No. 117 before the armistice, the second, cases discharged during the armistice, and the number below the line, the total.)

There are once more discrepancies in individual items in this comparative study as shown in Table 38. The proportion of class A of the prearmistice group was 7.6 per cent, but 35.5 per cent of the armistice group were normal in 1914. On the other hand, the armistice class A amounted to 51.1 per cent and only 38.9 per cent of this group are now normal. The prearmistice class B amounted to 52.1 per cent but the prearmistice cases now neurotic are only 45 per cent; the armistice, class B were 19.2 per cent and the armistice neurotic 42.2 per cent. Both the prearmistice and armistice proportions of "fatigued" cases are considerably smaller than the class C cases. And lastly, those of the prearmistice group now seriously handicapped constitute 8 per cent of the group as compared with only 3 per cent of D and T discharges before the armistice.

These figures show a marked tendency for improvement among the men of the follow-up group as a whole in the interim of five years since the study made in 1919-20. What the causes are that underlie the improvement is a difficult problem for complete analysis. A few that might be cited are the *vis medica-trix* of nature in that length of time, the improvement of business conditions, offering more opportunities for civilian reestablishment, and, perhaps most essential of all, the various governmental and social agencies focussed upon the problem of soldier after care. At any rate, whatever the causes of improvement, the hospitalized war neurotics of the American Expeditionary Forces have now become more of a social asset in civilian life than they were in 1919-20 and considerably less of a problem as a group to themselves, to their families and to the American people.

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APPENDIX

APPENDIX

A BIBLIOGRAPHY OF AMERICAN CONTRIBUTIONS TO WAR NEUROPSYCHIATRY

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NEW YORK CITY,
April 12, 1917.

Maj. Gen. W. C. GORGAS,
Surgeon General, U. S. Army, Washington.

SIR: In accordance with the plan agreed upon in our recent conference with you in Washington relative to supplying psychiatric hospital units for the Army, we have visited Base Hospital No. 1, Fort Sam Houston, Base Hospital No. 2, Fort Bliss, and the military prison at Fort Leavenworth. All the officers of the Medical Corps whom we met treated us with great cordiality and kindness and we wish especially to express our appreciation of the courtesies extended to us by Colonel McCaw, Lieutenant Colonel Ireland, Lieutenant Colonel Straub, and Captain King. These officers devoted much of their personal time to us, answered all our inquiries, and placed much valuable information at our disposal.

From the information thus gained, together with that which we had already gathered regarding the occurrence of mental and nervous diseases among soldiers, we desire to bring to your attention the following considerations:

1. *Need and purposes of psychiatric hospital unit.*—The excessive prevalence of mental disorders in military life, as compared with civil life, is borne out by statistics drawn from various sources. Mental diseases were approximately three times as prevalent among the troops on the Mexican border last summer as among the adult civil population of the State of New York. The excess among soldiers is still higher under war conditions. In our own Army the insanity rate rose during the Spanish-American War from 8 per thousand to 20 per thousand; in the German troops during the Boxer Rebellion the rate reached 50 per thousand. The statistics available regarding the incidence of mental diseases in our own troops indicate that an army of 500,000 may be counted upon to furnish 1,500 insane patients a year in peace and not fewer than 4,500 a year in war, or even perhaps at times of rapid mobilization. In other words, the number of insane patients coming to notice from such an army under the conditions which prevailed on the Mexican border last summer is certain to exceed the entire number of men admitted annually to all public institutions for the insane in the State of California.

Having in mind the high incidence in armies of such a serious and disabling disorder as insanity, it is evident that some special provisions should be made for the diagnosis and care of such patients. Without special provisions it is unavoidable that mental cases will, for the most part, be maintained in prison wards. This method of dealing with mental diseases is obsolete. It excludes scientific management and deprives the patients of even fresh air, exercise, and occupation. We were much impressed by the uniformly high standard of provisions for the diagnosis and treatment of all purely physical diseases in the base hospitals which we visited. The provision existing for the mentally ill, however, presented a sharp contrast. We believe special hospital wards conducted by alienists would not only facilitate more rapid and more complete recovery from psychoses but would remove disturbing elements from the general wards, assist in making important decisions regarding discharges and retirement, and release the regular medical officers for duties for which their training has more specifically fitted them and which they all say are more congenial.

In addition to cases of insanity and mental deficiency, all armies have to deal with considerable numbers of soldiers with hysteria and neurasthenia. The prevalence of these disorders increases greatly during war and at times of large mobilization. If, even in civil life, such cases are treated in general hospital wards, they show little tendency to recovery. The suggestions of physical illness inseparable from hospitals often fix their symptoms. When, on the other hand, such patients are cared for where such suggestions can be eliminated and some special methods of treatment can be employed they frequently make rapid recoveries. A recent report from a French military neuropsychiatric unit states that many soldiers, after a neurotic invalidism lasting for months in the general hospital, were returned to the colors in from two to three weeks when treated in these units.

Physicians experienced in psychiatry could also be of service to the Army in making early diagnoses of mental disease when other issues than those of treatment are concerned. Such early diagnoses should be especially helpful in disciplinary cases. Many military as well as civil offenders are in reality beginning cases of mental diseases or persons with constitutional psychopathic conditions who are better out of the Army than in it. Their prompt

recognition by experts would often do not a little for the morale of troops. The experts connected with a psychiatric unit could often aid very materially in cases where malingering is suspected but can not easily be established.

2. *General plan.*—We believe that a psychiatric unit of 110 beds should be attached to the base hospital nearest the largest concentration of troops and that smaller units of 30 beds each should be attached to base hospitals elsewhere, as required. The central unit as well as each smaller unit should be a part of the base hospital and directly under the medical officer in command. To these units should be admitted not only well-recognized cases of mental disease and mental deficiency but cases for observation, hysterics, disciplinary cases, and, in short, soldiers presenting any condition in which diagnosis can best be made and treatment carried on by experts in this branch of medicine.

3. *Personnel.*—The psychiatric units can serve the purposes which have been indicated only if they are integral parts of military hospitals and the alienists are medical officers of the Army. The central unit of 110 beds will require eight medical officers, assigned to duty as follows: One in general charge, one as chief of medical service, six as ward physicians.

It is essential that the medical officer in charge should have training and practical experience in medico-military duties. He should be responsible for all reports, correspondence, and property, and should assign the duties of all medical officers, noncommissioned officers, and privates. The smaller units of 30 beds would each require three medical officers. It would seem proper, in view of their long special training and their responsibility, that the medical officer in charge of the central unit should have the rank of major and the other officers that of captain.

The success of these units will depend largely upon having as nurses skillful men with long training in the treatment of mental diseases. If provision can be made for enlistment for the duration of the war, the services of nurses in responsible positions in some of the best hospitals for mental diseases in the country can be secured.

The attached table shows the personnel which will probably be required for the central unit and for each of the smaller units.

4. *Buildings.*—The pavilions used in the base hospitals along the Mexican border could be very well adapted for use in these units in all except the most severe climate. Attached are sketch plans showing a scheme of general arrangement, a typical pavilion for general cases, a reception pavilion, and a pavilion for disturbed patients. Plans showing a scheme of general arrangement for a smaller unit and of the two pavilions constituting such a unit are also attached.

5. *Equipment.*—Assuming that beds, bedside stands, and other standard articles of equipment can be supplied by the Government, the following special equipment will be furnished by the committee organizing the units: Hydrotherapeutic outfits, electrical outfits, special diagnostic instruments, including psychological apparatus, typewriters, books.

6. *Organization of committee.*—For the purpose of expedition in correspondence and executive work, the National Committee for Mental Hygiene, 50 Union Square, New York City, has appointed as a committee on furnishing hospital units for nervous and mental disorders to the United States Government and the following men have been asked to serve as additional members:

Pearce Bailey, M. D., New York City.

Mr. Otto T. Bannard, treasurer, National Committee for Mental Hygiene, New York City.

Lewellys F. Barker, M. D., president, National Committee for Mental Hygiene, Baltimore, Md.

Albert M. Barrett, M. D., medical director, State Psychopathic Hospital, Ann Arbor, Mich.

G. Alder Blumer, M. D., superintendent, Butler Hospital, Providence, R. I.

Owen Copp, M. D., physician in chief, Pennsylvania Hospital, Philadelphia, Pa.

Walter E. Fernald, M. D., superintendent, Massachusetts School for Feeble-Minded, Waverley, Mass.

George H. Kirby, M. D., clinical director, Manhattan State Hospital, New York City.

August Hoch, M. D., director, New York State Psychiatric Institute, New York City.

Adolf Meyer, M. D., director, Phipps Psychiatric Clinic, Baltimore, Md.

Stewart Paton, M. D., Princeton, N. J.

William L. Russell, M. D., medical director, Bloomingdale Hospital, White Plains, N. Y.

Thomas W. Salmon, M. D., medical director, National Committee for Mental Hygiene, New York City.

Elmer E. Southard, M. D., director, Boston Psychopathic Hospital, Boston, Mass.

William A. White, M.D., superintendent, St. Elizabeths Hospital, Washington, D. C.

Through the generosity of Miss Anne Thomson, daughter of the late Frank Thomson, of Philadelphia, we have now on hand \$15,000, an amount sufficient to defray the expenses of equipping the central unit of 110 beds in accordance with the list given. Doubtless funds will be forthcoming to supply the smaller units as they are required. We are prepared to get the central unit together at once, both as to personnel and equipment.

Will you kindly inform us at your early convenience if the initial unit is acceptable to the Government and, if so, at what date it is needed and also kindly give us all information necessary to organize in a way to meet all Army requirements? Doctor Salmon holds himself in readiness to come to Washington in this connection at any time.

Respectfully,

PEARCE BAILEY, M. D.

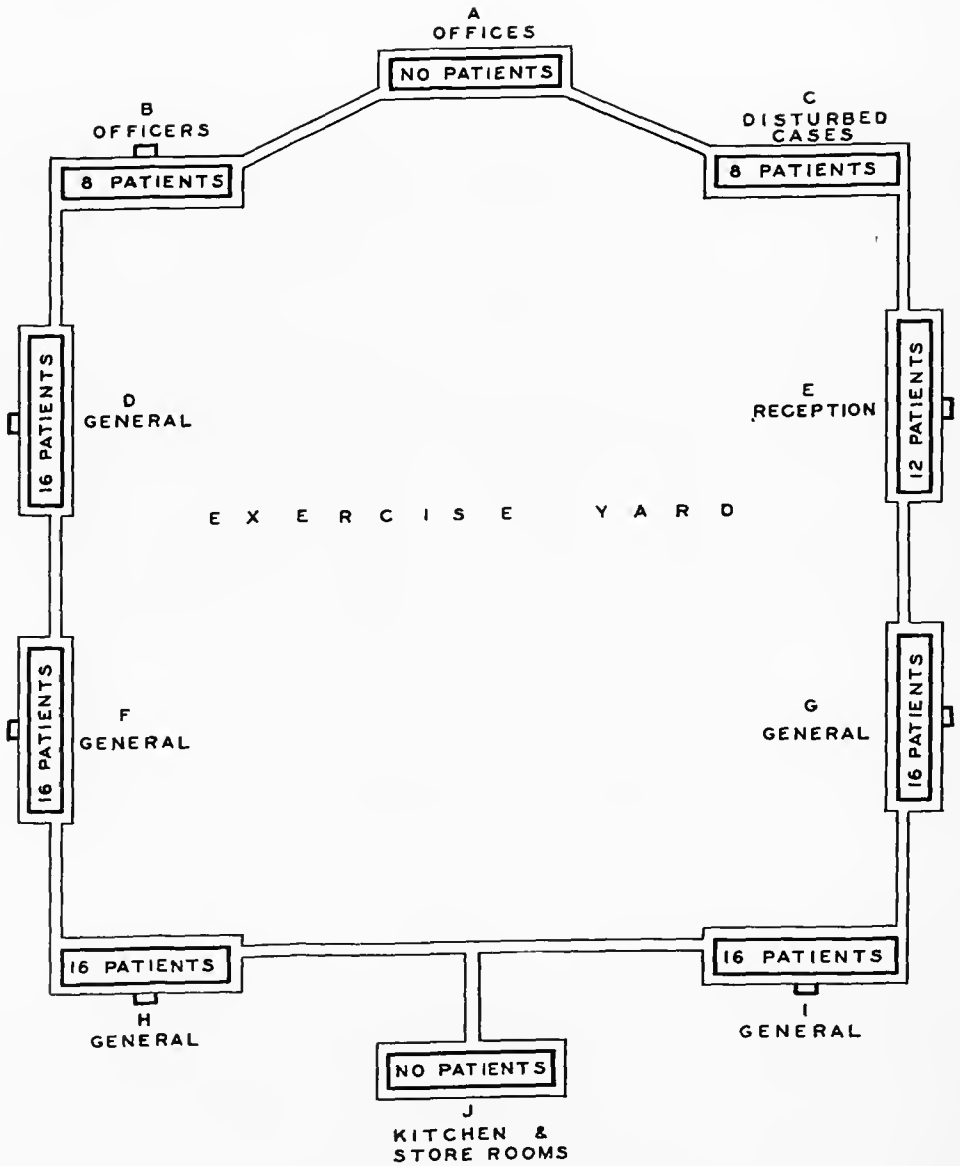
STEWART PATON, M. D.

THOMAS W. SALMON, M. D.

ENCLOSURES

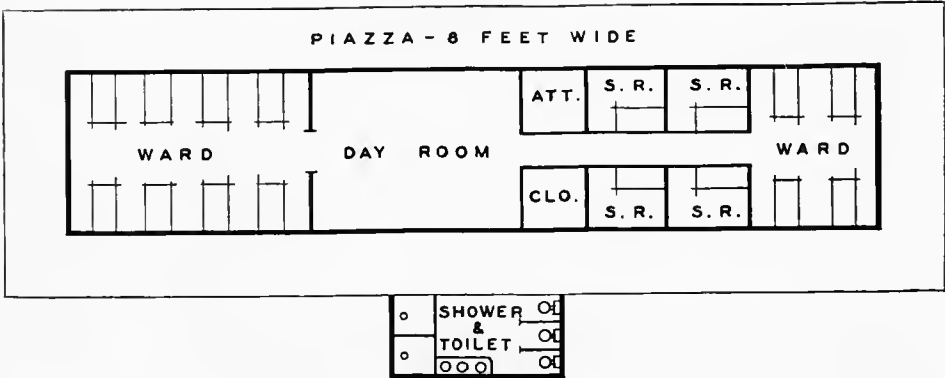
1. Outline of facilities for treatment of mental disease in military and civil hospitals.
2. Blue print showing general arrangement of central psychiatric unit of 110 beds.
3. Blue print showing typical pavilions in central psychiatric unit.
4. Blue print showing typical pavilions in central psychiatric unit.
5. Personnel of central psychiatric unit.
6. Blue print showing general arrangement of smaller unit of 30 beds.
7. Blue print showing typical pavilions in smaller unit.
8. Personnel of smaller psychiatric unit.

Military zones	Military hospitals	Facilities for treating mental diseases
Zone of the interior.....	Camp hospitals; general hospitals (permanent); hospitals for prisoners of war; convalescent camps; hospital trains; hospital ships (in overseas operations); hospitals at ports of embarkation (in overseas operations).	Central psychiatric hospital unit (110 beds) attached to camp or base hospital nearest largest concentration of troops; civil institutions; Government Hospital for the Insane (St. Elizabeths Hospital); special wards in State hospitals for the insane; psychopathic hospitals; psychopathic wards in general hospitals.
Zone of communications.	Base hospitals (500 beds); evacuation hospitals (432 beds); evacuation hospital ambulance companies.	Psychiatric pavilions (30 beds) attached to base hospitals in favorable locations.
Zone of the advance....	Field hospitals (216 beds); ambulance companies; dressing stations; first aid.	Psychiatrist and neurologist attached to each field hospital company.

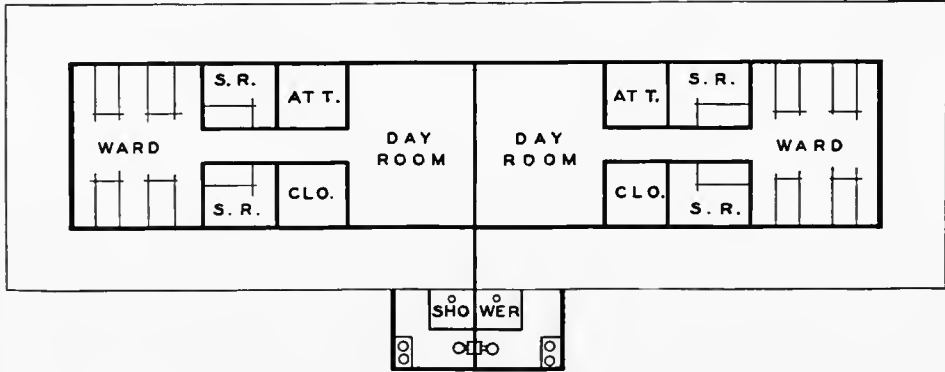


GENERAL ARRANGEMENT
CENTRAL UNIT OF 110 BEDS

D-F-G-H-I
GENERAL



E
RECEPTION



TYPICAL PAVILIONS
CENTRAL UNIT OF 110 BEDS

PERSONNEL OF CENTRAL UNIT, 110 BEDS

Commissioned medical officers

Major A ¹	In general charge.
Captain B, M. R. C.....	Chief of Medical Service.
Captain C, M. R. C.....	Ward physician.
Captain D, M. R. C.....	Do.
Captain E, M. R. C.....	Do.
Captain F, M. R. C.....	Do.
Captain G, M. R. C.....	Do.
Captain H, ¹ M. R. C.....	Do.

Noncommissioned officers, Hospital Corps

Sergeant, first class ¹	Acting first sergeant, in general supervision of the hospital and in charge of medical property and records; acting quartermaster sergeant.
Do. ¹	In charge of mess and kitchen.
Do.....	In charge of hydrotherapy.
Do.....	In charge of reception ward.
Sergeant.....	Ward master.
Do.....	Do.
Do.....	Do.
Do.....	Do.

Enlisted men, Hospital Corps, assigned to duty ¹

2 acting cooks.	1 in storeroom.
22 ward attendants (12 day, 8 night, 2 relief).	1 in office.
1 in laboratory.	1 in outside police.
4 in kitchens and mess rooms.	2 supernumeraries.
1 orderly (to Major A).	

Recapitulation

Commissioned medical officers.....	8
Noncommissioned officers, Hospital Corps.....	8
Enlisted men, hospital corps.....	35
Total.....	51
Patients.....	110
Grand total.....	161

PERSONNEL OF UNITS ATTACHED TO BASE HOSPITALS, 30 BEDS

Commissioned medical officers

Captain A ¹	In general charge.
Captain B.....	Ward physician.
Captain C.....	Do.

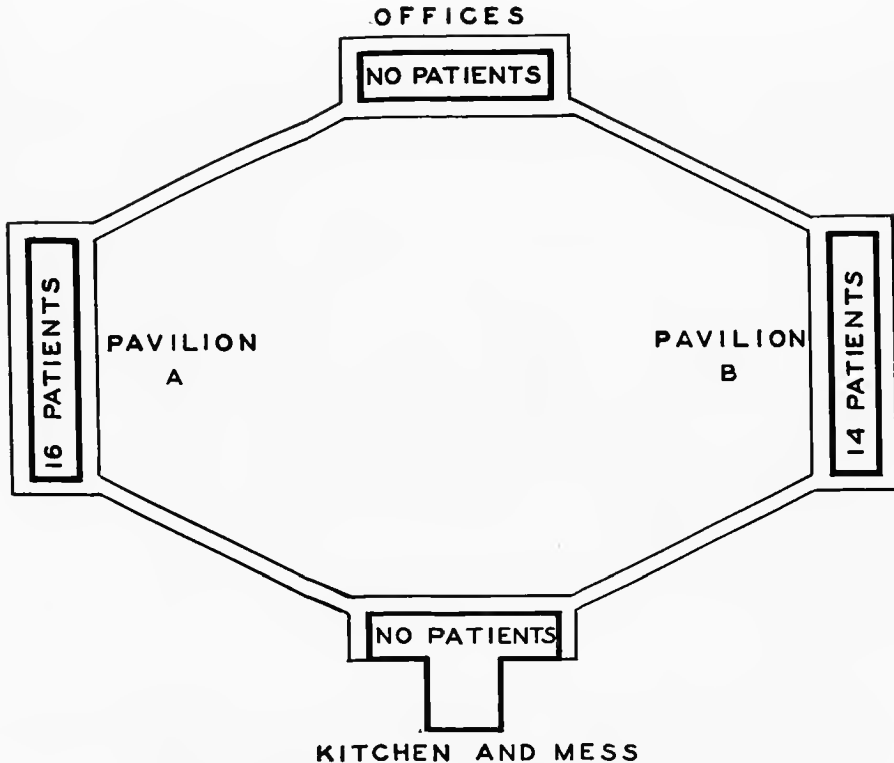
Noncommissioned officers, Hospital Corps

Sergeant, first class ¹	Acting first sergeant.
Sergeant.....	In charge of mess and kitchen.
Do.....	In charge of Ward A.
Do.....	In charge of Ward B.

¹ Previous military training required.

*Enlisted men, Hospital Corps, assigned to duty*¹

1 acting cook.	1 orderly (to Captain A).
6 ward attendants (4 day, 2 night, 1 relief).	1 in office.
2 in kitchen and messroom.	1 supernumerary.



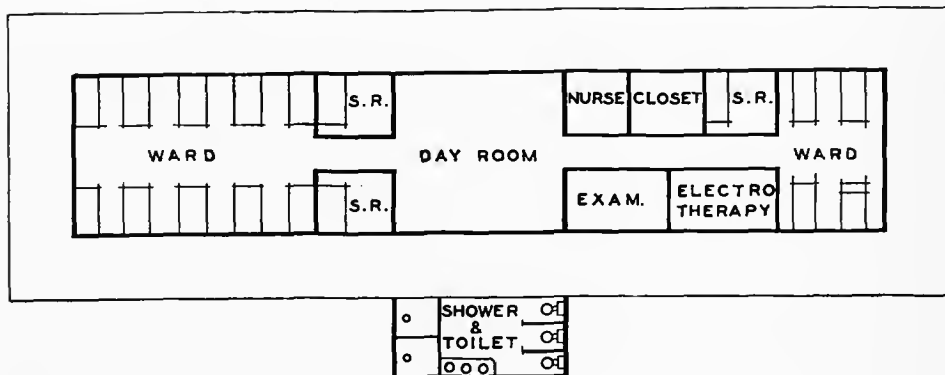
**GENERAL ARRANGEMENT
SMALLER UNIT OF 30 BEDS**

Recapitulation

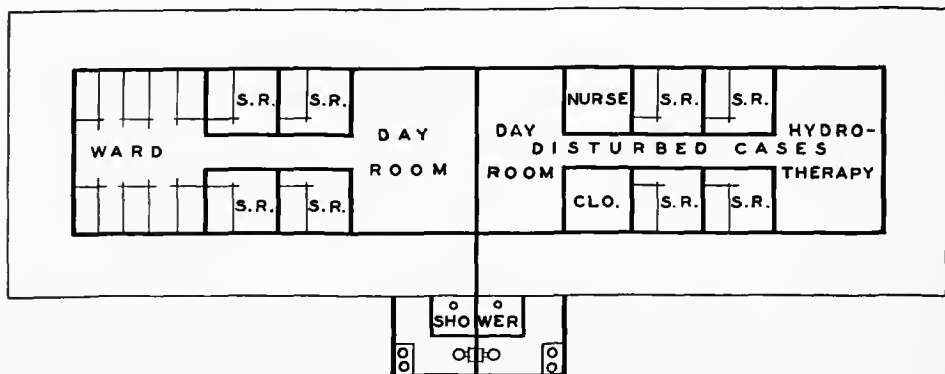
Commissioned medical officers.....	3
Noncommissioned officers, Hospital Corps.....	4
Enlisted men, Hospital Corps.....	12
Total.....	19
Patients.....	30
Grand total.....	49

¹ Previous military training required.

PAVILION A - FOR OBSERVATION CASES



PAVILION B - FOR INSANE CASES



TYPICAL PAVILIONS
SMALLER UNIT OF 30 BEDS

THE CARE AND TREATMENT OF MENTAL DISEASES AND WAR NEUROSIS ("SHELL SHOCK") IN THE BRITISH ARMY¹

INTRODUCTION

No medico-military problems of the war are more striking than those growing out of the extraordinary incidence of mental and functional nervous diseases ("shell shock"). Together these disorders are responsible for not less than one-seventh of all discharges for disability from the British Army, or one-third if discharges for wounds are excluded. A medical service newly confronted like ours with the task of caring for the sick and wounded of a large army can not ignore such important causes of invalidism. By their very nature, however, these diseases endanger the morale and discipline of troops in a special way and require attention for purely military reasons. In order that as many men as possible may be returned to the colors or sent into civil life without disabilities which will incapacitate them for work and self-support, it is highly desirable to make use of all available information as to the nature of these diseases among soldiers in the armies of our allies and as to their treatment at the front, at the bases, and at the centers established in home territory for their "reconstruction."

England has had three years' experience in dealing with the medical problems of war. During that time opinion has matured as to the nature, causes, and treatment of the psychoses and neuroses which prevail so extensively among troops. A sufficient number of different methods of military management have been tried to make it possible to judge of their relative merits. My visit to England was for the purpose of observing these matters at first hand so that I could contribute information which might aid in formulating plans for dealing with mental and nervous diseases among our own forces when they are exposed to the terrific stress of modern war.

ACKNOWLEDGMENTS

I wish, at the outset, to record my appreciation of the many courtesies which enabled me to use the limited time at my disposal to the best advantage. The Army Council, upon the request of Ambassador Page, agreed to place at my disposal every facility for studying mental and nervous diseases. The medical officers of the special hospitals for mental and nervous cases gave me opportunities to observe the work of the institutions under their charge. Others actively engaged in dealing with various administrative and clinical phases of these problems not only gave me valuable information but very kindly offered suggestions as to practical means by which our Army might profit by the experience of British medical officers. I would mention especially Lieut. Col. William Aldren Turner, the principal advisor to the Government in these matters; Lieut. Col. Sir John Collie, president of the Special Pension Board on Neurasthenies; Sir William Osler, under whose direction work is carried on in the special hospital for functional disorders of the heart; Dr. C. Herbert Bond, of the Board of Control; Dr. Henry Head, who represented the Medical Research Committee in the conference upon nervous diseases among soldiers held in Paris in April, 1916; Dr. H. Crichton Brown, who has prepared a thoughtful memorandum on the subject for the war office; Lieut. Col. Sir Robert Armstrong-Jones and the American liaison officers in London—Brigadier General Bradley and Lieutenant Colonel Lyster of the Army and Surgeon Pleadwell of the Navy. Dr. William Morley Fletcher, secretary of the Medical Research Committee, which from an early period in the war has directed attention to the importance of nervous diseases, presented me with a motion-picture film showing some of the more common symptoms in soldiers suffering from the neuroses. Dr. John T. MacCurdy, associate in psychiatry at the New York State Psychiatric Institute, who was studying the war neuroses in special hospitals in London, very kindly visited the Moss Side Military Hospital at Maghull and the Craiglockhart Hospital for Officers near Edinburgh and furnished me with reports on the facilities for treatment at these institutions.

¹ By Maj. Thomas W. Salmon, Medical Officers' Reserve Corps, U. S. Army.

SCOPE OF REPORT

I have omitted entirely any account of the treatment of organic nervous diseases or of injuries to the central nervous system or the peripheral nerves. Organic nervous diseases are not especially frequent and seem to present no special military problems. Injuries of the central nervous system are frequent and severe. Those that do not prove fatal very quickly are well cared for at first in general surgical wards where the services of neurologists and neurological surgeons are available and later in special hospitals or special hospital wards. A very serious difficulty in dealing with destructive brain and cord lesions is that the patients sooner or later pass from hospitals in which special care and nursing are provided to their homes or to poorly equipped auxiliary hospitals in which many soon get worse or die. Injuries to the peripheral nerves are frequent and important, in fact there are few extensive injuries to the extremities in which important nerves escape. With neurological advice, the surgeons deal with these cases successfully in the base hospitals and their after-treatment is well carried on in the "reconstruction centers" for orthopedic cases. Neither of these classes of injuries concerns especially the treatment or military management of mental and functional nervous diseases except for the fact (to be commented upon later) that the treatment of the war neuroses might be carried out advantageously in home territory in cooperation with orthopedic reconstruction centers.

Although the problems presented by mental and functional nervous diseases have many clinical and administrative features in common and although these disorders should be dealt with by medical officers with the same kind of special training, it seems desirable to consider their treatment in England separately in this report.

My observations as to the nature of the neuroses met with in war are based partly upon the very extensive literature upon this subject which has come into existence since the commencement of the war, but chiefly upon personal conversation with medical men engaged in treating these cases in England. It is almost needless to say that during a short period largely spent in securing information regarding facilities for treatment and administrative methods of management and in examining special hospitals for the care of these cases, I had no opportunity to make original clinical observations, although I saw and examined superficially many cases of all degrees of severity.

MENTAL DISEASES (INSANITY)

PREVALENCE

For many years war military life has been called the "touchstone of insanity" on account of the high prevalence of mental diseases in armies even during peace. Medical statistics of the present war are as yet untabulated and so it is impossible to state the rate per thousand for mental diseases. The only means of estimating their incidence is by considering the number of cases diagnosed officially as "insane" in the military hospitals at a given time. On March 31, 1917, about 1.1 per cent of all patients in military hospitals of Great Britain were officially diagnosed as insane. The percentage among expeditionary patients was 1.3 and among nonexpeditionary patients 1.1. The enormous prevalence of wounds in patients from the expeditionary troops reduces the percentage of all other conditions and so the excess of mental cases among expeditionary cases is much greater than is apparent. Among non-wounded expeditionary patients the percentage was about three times that among the non-expeditionary cases. The rate among officers was only one-third that among men in expeditionary patients and about the same in nonexpeditionary patients. This has an important bearing upon the fact that the rate for the war neuroses ("shell shock") among officers is five times as high as among men. About 6,000 patients are admitted annually from both the expeditionary and nonexpeditionary forces to the special military hospitals for the insane. As one such hospital with a large admission rate is a "clearing hospital" and distributes its patients to other special hospitals, some patients are obviously counted twice in the only statistics available. To offset this is the fact that a much larger number of mental cases do not go to special military hospitals at all, but are discharged to friends, with or without an official diagnosis of insanity, or are sent directly to local institutions for the insane. This is

the rule in the case of nonexpeditionary troops. It can be estimated, from all the data available, that the annual admission rate is about 2 per 1,000 among the nonexpeditionary troops and about 4 per 1,000 among expeditionary troops. The rate in the adult male civil population of Great Britain is about 1 per 1,000.

There is statistical evidence which indicates that the insanity rate in the British Army is less at the present time than it was in the first year of the war, and that it has not reached some of the high rates reported in recent wars. The high and constantly increasing rate for the war neuroses suggests that the latter disorders are taking the place of the psychoses in modern war. How much this phenomenon is due to an actual change in incidence and how much to former errors in diagnosis can not be stated accurately. There is a strong suspicion that the high insanity rate in the Spanish-American War and the Boer War was due, in part at least, to failure to recognize the real nature of severe neuroses, similar to those grouped under the term "shell shock" in this war. This may account for the remarkable recovery rate among insane soldiers in the two wars in question. It is certain that in the early months of the present war many soldiers suffering from war neuroses were regarded as insane and disposed of accordingly. When one remembers that the striking manifestations seen in these cases are unfamiliar in men to physicians in general practice, it is not surprising that some of the severer disturbances should have been interpreted as signs of insanity. The benign course and rapid recovery of many of these cases upon their return to England, together with increasing familiarity with the symptoms of functional nervous diseases, soon enabled the medical officers serving with troops to recognize their real nature. Even at the present time, however, it is by no means rare for soldiers with functional nervous diseases to be sent to England as insane or for insane soldiers to be sent to hospitals for the war neuroses. This is shown by the records of the Red Cross Military Hospital at Maghull, a hospital for the treatment of war neuroses. Since this hospital was opened, 10 per cent of the 1,74 patients admitted¹ were found to be suffering from mental diseases and sent to hospitals for the insane. On the other hand, 20 per cent of the 6,755 patients received¹ from France since the commencement of the war at "D Block" of the Royal Victoria Hospital, at Netley, a clearing hospital for mental cases, were subsequently sent to hospitals for functional nervous diseases. On the whole it may be said that medical officers serving with troops are becoming more familiar with the symptoms of functional nervous diseases and that fewer such errors now occur.

TREATMENT

The return to England of considerable numbers of mental cases, commencing early in the war and steadily continuing, soon led to rather difficult questions as to their disposal. Before the war, the army maintained a small department for the insane at the Royal Victoria Hospital, at Netley. This department which is known as "D Block" and constitutes practically an independent unit, accommodated only 125 men and 3 officers. For years the annual admission rate averaged 120. The only cases received were soldiers who had served at least 10 years in the regular army or those with shorter service whose insanity seemed clearly to be due to such causes arising in line of duty as head injuries, tropical fevers, exhaustion, wounds, etc. As it was manifestly impossible to care for more cases at Netley, the insane soldiers who were first sent home from the expeditionary forces, as well as those from the home forces, were "certified" (i. e., legally committed) and sent to the local "county lunatic asylums" as they are called, unless their relatives and friends took them off the hands of the Government and disposed of them otherwise. The appearance of soldiers from the front in the district asylums, where they were burdened by the double stigma of lunacy and pauperism, aroused public disapproval that speedily made itself felt in Parliament.

About this time arrangements had been made to take over 1 county or borough asylum in each group of 10 in the United Kingdom for use as a general military hospital for medical and surgical cases. This made it possible to establish special war hospitals for mental cases. A department of the Middlesex County Asylum (renamed the Napsbury War Hospital) was opened for mental cases, and the District Asylum at Paisley, Scotland (renamed the Dykebar

¹ To May 31, 1917.

War Hospital), was turned over entirely for this purpose, as was part of the Lord Derby War Hospital at Warrington, which had been the Lancashire Asylum. Later the Belfast District Asylum in Ireland was taken over as the Belfast War Hospital, and still more recently the Perth District Asylum was taken over as the Murthley War Hospital, both being used entirely for the insane. A pavilion at the Richmond District Asylum, Ireland, accommodates 100 and a small hospital in London (Letchmere House) cares for about 84 officers. An annex in connection with the Dykebar War Hospital has recently been opened so that there are now about 3,400 beds in strictly military hospitals available in Great Britain and Ireland for insane soldiers.

No attempt has been made to care for the insane in France, the policy of the War Office being to send all cases to the clearing hospital at Netley and then to the special institutions named as soon as possible. There are available in France only 125 beds, all for the temporary detention of mental cases.

Of the 21 asylums and similar institutions in Great Britain and Ireland which have been converted into military hospitals,¹ 3 are used wholly or in part for functional nervous diseases. In spite of the fact that the names of all these asylums were changed when they were taken over for their new use, a suspicion apparently exists among the public that soldiers with mental or nervous diseases are still being sent to district asylums as "pauper lunatics," the official designation of such patients. It is not easy for us in America to understand the importance of this aspect of the question for in most States our State hospitals enjoy a reputation which would no more stigmatize insane soldiers than it does their sisters or daughters when they require treatment obtainable only in these institutions. In England, however, insanity and pauperism have been closely linked, and it is the latter which is very largely responsible for the stigma attached to these institutions. The Government was obliged, therefore, early in 1915 to announce that it has adopted the policy of sending to the district asylums only the following groups of cases from the expeditionary forces:

1. Patients with general paralysis of the insane.
2. Patients with chronic epilepsy.
3. Patients with incurable mental diseases and those giving a history of insanity before enlistment.

There is power to apply the pension of the soldier toward this support in these cases, and he is thereby prevented from coming "on the rates." The separation allowances are discontinued when the pension is commenced. All insane soldiers from the nonexpeditionary forces are certified and sent to the district asylums unless it can be shown that the disease was caused or aggravated by military service.

The results of these arrangements are not wholly satisfactory. There is a strong tendency to adopt an entirely different attitude toward insane soldiers than the wonderfully generous one which the nation has adopted toward the wounded and those suffering from physical disease. In the latter, the Government readily admits its responsibility and makes liberal provisions for treatment, pension and industrial reeducation, while in the former every effort is made to place the burden of responsibility and of support upon the patient or his relatives by magnifying alleged constitutional tendencies and minimizing the effects of military service. It is quite apparent that the conditions of actual service have much to do with the development of mental disease. Even in the case of general paralysis of the insane it is by no means certain that a young soldier with a positive Wassermann test would have developed general paralysis if he had not been exposed to the supreme ordeal of service at the front. This official attitude toward mental disease results in an average period of treatment far shorter than is required in even the most benign psychoses in civil life. It is evident that mental cases are insufficiently treated in military hospitals.

During 1916, the number of mental cases passing through the 3,400 beds available for their care in Great Britain and Ireland was about 6,000. The recovery rate in military cases is much higher than in the mental cases admitted to civil hospitals, but the rapid movement of population results chiefly from the custom of "passing on" these cases. Insane soldiers of the nonexpeditionary forces are sent almost invariably directly to district asylums from general hospitals without even going to "D Block," where an inquiry could be made by

¹ To July 1, 1917.

experts to estimate the part played by military service in the causation of mental illness. When relatives and friends are induced to take insane soldiers from the military hospitals the next step is usually admission to the district asylums. During the year ending May 31, 1917, 900 insane soldiers were admitted to the local asylums. A considerable proportion of the insane, even from the expeditionary forces, sooner or later find their way into the institutions out of which Parliament was intent upon keeping them.

The disposition of mental cases is well illustrated by the following table showing what was done in the case of 5,473 patients admitted from September 1, 1914, to May 31, 1917, at "D Block," Netley, a clearing hospital for mental diseases:

DISPOSITION OF CASES ADMITTED TO "D BLOCK," NETLEY, FROM THE BEGINNING OF THE WAR
TO DECEMBER 31, 1916

To institutions for the insane:	
Lord Derby War Hospital, Warrington.....	1, 424
Murthley War Hospital, Perth.....	210
Dykebar War Hospital, Paisley.....	611
Shorncliffe (Canadian Clearing Mental Hospital).....	147
District asylums.....	128
Dartford (for insane prisoners of war).....	3
To war hospitals for functional nervous cases:	
Moss Side Hospital, Maghull.....	509
Springfield War Hospital, London.....	680
To hospitals for organic nervous diseases and injuries:	
Queen Square.....	4
Maida Vale (for pensioners).....	2
To Royal Victoria Military Hospital, Netley (recoveries and nervous diseases).....	1, 007
To almshouses.....	2
To Canadian hospitals or returned to Canada.....	5
To Australian hospitals or returned to Australia.....	33
To other hospitals and institutions.....	204
Discharged to relatives and friends.....	258
Died.....	21
Furloughed.....	110
Returned to duty.....	58
Remaining in hospital.....	57
Total.....	5, 473

CLINICAL TYPES OF MENTAL DISEASES AMONG SOLDIERS

Contrary to popular belief and to some medical reports published early in the war, no new clinical types of mental diseases have been seen in soldiers. There are no "war psychoses." The clinical pictures familiar in civil life have been seen, colored often by the experience at the front, but for the most part unchanged in their symptomatology, outcome, and course. The distribution of the different psychoses has been strikingly different than in civil life, but this has been chiefly due to the different age periods represented in patients for the army. The absence of the organic mental diseases of the later decades of life, which play so large a part in civil statistics, has resulted in abnormally high percentages for other psychoses. Although no statistics for the whole number of admissions in a single year are available, nearly a thousand admissions from expeditionary troops to the Dykebar War Hospital during 1916 have been tabulated by Maj. R. D. Hotchkis.

This series of cases is large enough to make some of the findings significant. They are borne out by observation made by Lieut. David K. Henderson at the Lord Derby War Hospital at Warrington, which received 2,042 mental cases during the year ending April 30, 1917.

Mental deficiency.—About 18 per cent of patients admitted to the military hospitals for mental diseases are mentally defective. Only such mental defectives as get into trouble or

develop acute psychotic episodes of one sort or another gain admission to these hospitals. It is impossible, therefore, from the point of view of the hospitals for mental diseases, to draw any conclusions as to the relation of mental deficiency to military service. The low grade of many cases received in the special hospitals is very striking and shows an amazing indifference on the part of recruiting officers to this type of disability. It is said that the worst types got in during the first rush of recruits under the voluntary system and that, since then, more pains have been taken to exclude them. Of the 151 mental defectives admitted to the Dykebar War Hospital, 37 were sent there simply because they had been giving trouble to other hospitals where they had been treated for wounds or diseases. Most of these soldiers were defectives of the restless, criminalistic type, many of whom had been civil offenders before entering the army. It is believed that they represented but a small part of cases of this type in the military service, the majority being dealt with from a disciplinary standpoint without regard to existence of mental defect, thus following the precedent which, unfortunately, is so firmly established in civil life. The remaining 114 defectives sent to Dykebar had been able to earn their own livelihood before entering the army. They had no criminalistic traits but had proved quite valueless in actual fighting. Sometimes these men were actually dangerous to their comrades and were permitted to load their rifles only when an attack was made. The very specialized activities of modern fighting discloses such individuals who under former military conditions would not have come to light. It is said that in the Boer War many boys from the special classes of the Birmingham and London schools made good soldiers, but apparently the military usefulness of the mentally defective has disappeared under the conditions of modern warfare—an exceedingly important point for the consideration of a nation engaged in raising a new army.

Among the defectives received in the military hospitals for mental cases are many in whom attention has been directed to their disability by episodes of confusion or excitement. The outlook is very favorable in such cases, the quiet routine of the hospital having a beneficial effect in a remarkably short period of time. Mental defectives develop war neuroses, in spite of statements to the contrary, but with striking infrequency. The generally high standard of intelligence among the patients in the "shell-shock" hospitals is noticeable.

There is much difference of opinion as to whether or not men known to be mentally defective should be recruited for any military service. In favor of their acceptance it is said that they can be assigned to certain kinds of work at the bases for which they are particularly fitted and thereby release soldiers of more intelligence for duty at the front. When one remembers that not only the army but the whole nation is at war it seems better, even for military reasons, to leave defectives at work in an environment to which they are accustomed than to try the experiment of even a special kind of military service. Certainly the army now has no means of assigning its work with reference to the limitations of such a special group. Moreover, when the army knowingly accepts mentally defective recruits it assumes a liability for their protection which it can hardly be expected to meet in all the exigencies of war. Much injustice is done in the army by punishing mental defectives for military offenses which would have been condoned had the real mental condition of the offenders been appreciated. There are sufficient grounds for excluding all mental defectives from the military forces except when the last available man power must be utilized. When this is the case it will doubtless be found that their most effective service will be rendered at the base under the supervision of noncommissioned officers who have been especially trained in their management.

Syphilitic psychoses.—About 2 per cent of the mental cases received in these special hospitals have general paresis. There is convincing evidence that the stress of war accelerates the progress of this disease. As older men enter the army the proportion of paresis rises. In the navy, which has been largely augmented by the enlistment of older men in the Naval Reserve, general paresis has attained a rate quite unknown in time of peace. Examinations to determine the prevalence of syphilis in recruits are extremely important and the experience of the British Army and Navy shows that no person presenting the slightest suspicion of syphilis of the central nervous system should be enlisted or commissioned for any military duty. In view of the social distribution of this disease and the generally higher age of officers, paresis is to be borne in mind especially in the examination of candidates for officers' commissions.

Manic-depressive insanity.—Patients in this group supply about 20 per cent of all admissions to military hospitals for mental diseases. The great proportion of those with depressed phases is very striking. Delusions and hallucinations are almost invariably colored by military experiences.

Alcoholic psychoses.—Soldiers with delirium tremens are admitted to special hospitals for mental diseases if they are stationed near such institutions. This disorder is now confined almost entirely to patients on leave from the front. During the early days of the war it was most frequently seen among those who had just entered military service and found their supply of alcohol restricted. The delusional types of alcoholic psychoses are found in older men stationed at bases who have the opportunity to continue life-long habits of drinking to excess. Attempted suicides are very common among alcoholics seen in military service. Alcoholics should not be accepted for military service even if it is possible to prevent them from securing alcohol at the front. Furloughs furnish opportunities for drinking, and the time and effort spent in training men are lost through attacks on such occasions.

Dementia præcox.—Patients with this disorder constitute 14 per cent of those admitted. The histories of these cases show that in most instances symptoms were manifested shortly after entering the military service. It is apparent that many of them had been psychotic before enlistment. There seems to be no special modification of symptoms on account of military service.

Epilepsy.—Seven per cent of cases received at Dykebar War Hospital were suffering from epilepsy. With one exception, all had had the disease before enlistment.

Constitutional psychopathic states.—A very large number of these cases are received in the special military hospitals for mental diseases. They probably represent but a small proportion of such soldiers in the army, for the percentage is large in the various disciplinary groups. Unfortunately, the nomenclature used in the British Army did not permit the use of any term applicable to these cases until February, 1916, when the War Office authorized the addition of "mental instability" to the list of mental diseases. Many of these cases are now being reported under this heading. The occasion of their admission is usually an acute psychotic episode or a medico-legal situation.

OUTLOOK IN MENTAL CASES

There are no statistics available to show the outcome in the mental diseases treated in military hospitals. Discharge is much more likely to be regulated by administrative considerations than by clinical ones. Acute conditions seem to recover very quickly. Few return to "first-line duty." The statistics indicate a much larger proportion than is actually the case. The number of those who go back to the colors is made up for the most part of patients who have recovered from delirium tremens and those with war neuroses who have been incorrectly admitted to institutions for the insane. Infective-exhaustive psychoses are much more likely to be regarded as "shell shock" than as mental disorders. The hospitals for mental diseases fail, therefore, to get these very recoverable cases and the recovery rate in such institutions suffers correspondingly.

SUMMARY

Sorely pressed to meet the tremendous medical problems of war, England first used her existing civil facilities for caring for mental diseases among soldiers. Public disapproval, based chiefly upon a mistaken attitude toward the insane and toward the local institutions for their care, forced a different method of management. The military hospitals for the insane, created without exception by converting civil institutions for mental diseases, failed to do much more than provide places for receiving mental cases and giving temporary care, the clearing hospital is woefully inadequate in size and personnel to determine the important issues which should be determined there, and a solution to the problem presented by mental diseases among soldiers in England does not seem to be in sight.

For the United States, this experience carries important lessons. More important than all others is the result of careless recruiting. The problem of dealing with mental diseases

in the army, difficult at best, has been made still more difficult by accepting large numbers of recruits who had been in institutions for the insane or were of demonstrably psychopathic make-up. The next most important lesson is that of preparing in advance of an urgent need, a comprehensive plan for using existing civil facilities for treating mental disease in a manner which will serve the army effectively and at the same time safeguard the interests of the soldiers, of the Government, and of the community.

WAR NEUROSES ("SHELL SHOCK")

Although an excessive incidence of mental diseases has been noted in all recent wars, it is only in the present one that functional nervous diseases have constituted a major medico-military problem. As every nation and race engaged is suffering severely from these disorders, it is apparent that new conditions of warfare are chiefly responsible for their prevalence. None of these new conditions is more terrible than the sustained shell fire with high explosives, which has characterized most of the fighting. It is not surprising, therefore, that the term "shell shock" should have come into general use to designate this group of disorders. The vivid, terse name quickly became popular and now it is applied to practically any nervous symptoms in soldiers exposed to shell fire that can not be explained by some obvious physical injury. It is used so very loosely that it is applied not only to all functional nervous diseases but to well-known forms of mental disease—even general paresis. Such a situation is most unsatisfactory and at the present time an attempt is being made to improve the nomenclature of the nervous disorders which prevail so extensively among soldiers.

Discussion of clinical features of the war neuroses is not within the scope of this report, which deals with treatment and military management.¹ It is impossible, however, even to define the problem with which we are dealing without a few general observations on the nature of the disorders which are grouped under the name "shell shock."

The subject can be clarified a little by dividing the different conditions now included under the term "shell shock" into some clinical and etiological groups. First should be considered cases in which the patients have been actually exposed to the effects of high explosives.

1. There are a number of cases, just how many it is quite impossible to say, in which exploding shells or mines cause death without external signs of injury. Apparently death in these cases results from different kinds of causes, among them damage to the central nervous system.

2. In another group of cases severe neurological symptoms following burial or concussion by explosions appear in characteristic syndromes suggesting the operation of mechanical factors. The studies of Major Mott indicate that concussion, aerial compression and the rapid decompression following it, "gassing" from the drift gases (carbon monoxide and nitric oxide) generated by the explosion and other purely mechanical effects of shell explosion may result in transitory or permanent symptoms of a type unfamiliar in the neuroses.

There can be no question of the propriety of supplying the term "shell shock" to these two groups of cases if a specific term is required.

3. Another group of cases among those exposed to shell fire includes patients in which there may or may not be damage to the central nervous system but in which the symptoms are those of neuroses familiar in civil practice even though colored in a very distinctive way by the precipitating cause. In this group of cases in which there is possibility but no proof of damage to the central nervous system, the symptoms present which might be attributable to such damage are quite overshadowed by those characteristic of the neuroses.

It is about these cases that much controversy exists. Mott includes them in his group of "injuries of the central nervous system without visible injury," holding that a physical or a chemical change at present unknown to us must underlie such striking disabilities. Others

¹ These extraordinarily interesting medical problems of the war are dealt with in a rapidly expanding volume of special literature. The July number of "Mental Hygiene" (Vol. 1, No. 3) contains a résumé of this literature. One hundred and forty-one references in English are given in Appendix I of this report. Attention is directed particularly to the contributions of Maj. Frederick M. Mott (71 and 72), Prof. G. Elliot Smith (108), Capt. Charles S. Myers (74), Capt. Clarence B. Farrar (32), Capt. M. D. Eder (28), and to the extensive report by Dr. John T. MacCurdy in the "Psychiatric Bulletin" (N. Y.) for July, 1917. (The numbers refer to the references in Appendix I.)

give less weight to the factor of physical damage and yet recognize its existence and reconcile the wide range of neurotic symptoms with the very minute amount of damage which may exist by terming these cases "traumatic neuroses." Others again feel that psychogenetic factors determine not only the continuing neurosis but even the initial unconsciousness and special sense disturbances.

4. There is a fourth group of cases in which even the slightest damage to the central nervous system from the direct effects of explosions is exceedingly unlikely or impossible, the patients being exposed only to conditions to which hundreds of their comrades who develop no symptoms are exposed. In these cases the symptoms, course, and outcome correspond with those seen in neuroses in civil practice.

If all neuroses among soldiers were included in these groups the use of the term "shell shock" might be defended. But many hundreds of soldiers who have not been exposed to battle conditions at all develop symptoms almost identical with those in men whose nervous disorders are attributed to shell fire. The nonexpeditionary forces supply a considerable proportion of these cases.

To state that, in the cases included in the last two groups of cases in which shell explosions play a part, the mechanism is that of a neurosis by no means excludes the operation of physical causes. Very little is known, however, regarding the physiological basis of the disorders in this group or even in those in the first two groups in which the issues are apparently predominantly organic. It may be that in the latter two groups endocrinitic disturbances are important. Minute injuries of the cord may exist and factors such as exposure, exhaustion, vascular disequilibrium and disorders of metabolism may enter into their causation. Treatment directed along the lines suggested by such an etiology has thus far proved quite ineffective, however, and there is only the most slender basis of experimental work to show that such factors are important. This is a fertile field for research. It is earnestly hoped by all those consulted in England that the United States Army, coming freshly into contact with this problem, will organize a working party of psychiatrists, neurologists, neuropathologists and internists and try to clear up some of these issues.

It is the opinion of most psychiatrists and neurologists who have been studying and treating "shell shock" in the British Army that the fourth group is the largest and most important and that, whatever the unknown physiological basis, psychological factors are too obvious and too important in these cases to be ignored. In support of this view there is much evidence, some of which it may be worth while to give.

1. The excess of war neuroses among officers. The ratio of officers to men at the front is approximately 1 to 30. Among the wounded it is 1 to 24.¹ Among the patients admitted to the special hospitals for war neuroses in England during the year ending April 30, 1917, it was 1 to 6.

2. The rarity of war neuroses among prisoners exposed to mechanical shock.²

3. The rarity of war neuroses among the wounded exposed to mechanical shock.

4. The clinical resemblance of the war neuroses to the neuroses of civil life in which the element of mechanical shock is lacking while the psychological situations are somewhat alike.

5. The fact that severe war injuries to the brain and spinal cord are not accompanied by symptoms similar to those in "shell shock," in which injuries of less degree are assumed.

6. The success attending therapeutic measures employed with reference to the psychological situations discovered in individual cases.

These suggestive facts require some elaboration. The high prevalence of "shell shock" among officers corresponds with the distribution of the neuroses, with reference to education and social grouping, in civil life. Soldiers who are wounded and those who are taken prisoners in battle are exposed to wind concussion and rapid decompression and other mechanical factors in the same degree as their comrades who suffer from neuroses. One must conclude from the fact that they escape that, being wounded or being captured, provides them with something which the neurosis provides for others. The symptoms exhibited usually bear a more direct relation to the existing psychological situation than they could possibly bear to

¹ Analysis of 381,983 casualties between Aug. 4, 1914-Aug. 21, 1915, reported in a statement in Parliament, and 901,534 casualties between July, 1916, and July, 1917.

² References given by Capt. C. B. Farrar.

the localization of a neurological injury. Thus, a soldier who bayonets an enemy in the face develops a hysterical tic of his own facial muscles, abdominal contractures occur in men who have bayoneted enemies in the abdomen. Hysterical blindness follows particularly horrible sights, hysterical deafness appears in those who find the cries of the wounded unbearable, and men detailed to burial parties develop anosmia.

The psychological basis of the war neuroses (like that of the neuroses in civil life) is an elaboration, with endless variations, of one central theme, escape from an intolerable situation in real life to one made tolerable by the neurosis. The conditions which may make intolerable the situation in which a soldier finds himself hardly need stating. Not only fear, which exists at some time in nearly all soldiers and in many is constantly present, but horror, revulsion against the ghastly duties which sometimes must be performed, emotional situations resulting from the interplay of personal conflicts and military conditions, all play their part in making an escape of some sort mandatory. Death provides a means which can not be sought consciously. Flight or desertion is rendered impossible by ideals of duty, patriotism, and honor, by the reactions acquired by training, or imposed by discipline or by herd reactions. Malingering is a military crime and is not at the disposal of those governed by higher ethical conceptions. Nevertheless, the conflict between a simple and direct expression of the instinct of self-preservation and such factors demands some sort of compromise. Wounds solve the problem most happily for many men, and the mild exhilaration so often seen among the wounded has a sound psychological basis. Others with a sufficient adaptability find a means of adjustment. The neurosis provides a means of escape so convenient that the real cause of wonder is not that it should play such an important part in military life but that so many men should find a satisfactory adjustment without its intervention. The constitutionally neurotic, having most readily at their disposal the mechanism of functional nervous diseases, employ it most frequently. They constitute, therefore, a large proportion of all cases, but a very striking fact in the present war is the number of men of apparently normal mental make-up who develop war neuroses in the face of unprecedentedly terrible conditions to which they are exposed.

One of the chief objections to the use of the term "shell shock" is the implication it conveys of a cause acting instantly. The train of causes which leads to the neurosis that an explosion ushers in is often long and complicated. Apparently in many military cases mental conflicts in the personal life of the soldier which are not directly connected with military situations influence the onset of the neuroses. Thus, men who have been doing very well in adapting themselves to war develop "shell shock" immediately after receiving word that their wives have gone away with other men during their absence.

Approached from the psychological viewpoint, the symptoms in the war neuroses lose much of their weird and inexplicable character. Most of them can be summed up in the statement that the soldier loses a function which either is necessary to continued military service or prevents his successful adaptation to war. The symptoms are found in widely separated fields. Disturbances of psychic functions include delirium, confusion, amnesia, hallucinations, terrifying battle dreams, and anxiety states. The disturbances of involuntary functions include functional heart disorders, low blood pressure, vomiting and diarrhea, enuresis, retention or polyuria, dyspnea, and sweating. Disturbances of voluntary muscular functions include paralyses, ties, tremors, gait disturbances, contractures, and convulsive movements. Special senses may be affected producing pains and anesthetics, mutism, deafness, hyperacusis, blindness, and disorders of speech.

In all of these the soldier is afflicted with more or less incapacity without obvious expansion. This is a condition involving grave dangers. His condition is degrading, and is often rendered more so by the punishment or ridicule to which he is subjected. For this reason, immediately after the onset of the symptoms of the neurosis, the patient passes through a very critical period. Improper management may add to the primary neurological disability—which is largely beyond our power of preventing—secondary effects which go even further in producing nervous invalidism. Long-continued treatment in general hospitals, confusion of the neurosis present with the organic nervous diseases, unintelligent management, all tend to produce the chronic "shell-shock" cases which are so familiar in the special hospitals for these disorders. Symptoms which were at one time quite easily

removable become fixed and refractory or new ones are constantly produced. The mental attitude—the patient's morale as a soldier and his attitude toward his disorder—reaches a very low level, will is seriously impaired, and a chronic invalid replaces a temporarily incapacitated soldier. These are matters in the realm of clinical psychiatry and psychopathology and are outside the scope of this report. Space is given to them here only because of their very important bearing upon treatment and military management.

PREVALENCE

The medical statistics of the war are as yet untabulated. Even if the records contained the information desired it would be very difficult to state the prevalence of the neuroses on account of the defective nomenclature employed. It is doubtful if there is another group of diseases in which more confusion in terms exists. Nervous or mental symptoms coming to attention after the soldier has been exposed to severe shellfire are almost certain to be diagnosed as "shell shock," and yet when such patients are received in England well-defined cases of general paresis, epilepsy, or dementia præcox are often found among them. This source of confusion tends to swell the number of cases reported under the term "shell shock," but there are many other errors which tend to diminish the apparent prevalence of the war neuroses. Chief among these is reporting the neuroses under the name of the most prominent somatic symptom. The largest group of cases in which this is done is made up of patients diagnosed officially as having disordered action of the heart ("D. A. H."). Where the only symptoms are cardiovascular ones of neurotic origin a legitimate question of medical nomenclature exists, but one sees in the wards or hospitals given over to functional heart disorders patients with hysterical paralyses, tics, tremors, mutism, anxiety states, and other severe neurotic symptoms. Another source of error is the practice, made mandatory by a recent order, of returning these cases (when occurring in soldiers engaged in actual fighting) as "injuries received in action."

With a view to discovering the prevalence of the neuroses and insanity, Sir John Collie, president of the Special Pension Board on Neurasthenies, made an analysis of 10,000 discharge certificates for disability, interpreting the diagnoses given in the light of his very large experience. He found that of these 10,000 consecutive cases the neuroses constituted 10 per cent.

The number of cases treated in the special hospitals in England give some idea of the prevalence of these disorders, but the fact that the number of troops in the expeditionary and nonexpeditionary forces is confidential makes it impossible to give the rates for the two great divisions of the British Army. During the year ending April 30, 1916, approximately 1,300 officers and 10,300 men were admitted to the special hospitals for "shell shock" and neurasthenies in Great Britain. The 1,800 beds in these special hospitals constitute less than half the total provisions in Great Britain for such cases as neurological departments exist in the large territorial general hospitals and in the Royal Victoria Hospital in Edinburgh. Moreover, a constantly increasing number of these cases are being treated in France. The recoveries in the hospitals there diminish, to an unknown degree, the number of cases received in the hospitals in Great Britain. It is the belief of those who have made an effort to ascertain the prevalence of the war neuroses that the rate among the expeditionary forces is not less than 10 per thousand annually, and among the home forces not less than 3 per thousand.

TREATMENT

General arrangements.—When soldiers suffering from functional nervous disorders began to arrive in England from the expeditionary forces in September, 1914, no special civil or military hospitals existed for their reception. In the case of mental diseases it was an easy task to convert "D Block" at the Royal Victoria Hospital into a clearing hospital and to utilize civil institutions for the insane for continued care, but in England, as in the United States, there are no public civil hospitals that are engaged exclusively in the work of treating the neuroses. The special civil hospitals for organic nervous diseases were soon filled with patients suffering from severe neurological injuries and were able to do very little on behalf of those with functional nervous disorders.

For a short time it was necessary to care for all such cases in general military hospitals for medical and surgical conditions. The rapid increase in the number of such cases during October and November, 1914, led to the detail of a special medical officer to ascertain their special needs and to prepare a plan for meeting them. The recommendation of this officer that special institutions be provided for functional nervous diseases was approved and when, in December, 1914, the Moss Side State Institution, at Maghull, was turned over to the war office, the first military hospital for functional nervous diseases was available. This institution was particularly suitable for this purpose. It had been completed but not opened for the care of mental defectives of the delinquent type and consisted of detached villas accommodating 347 patients. The number of these patients was so great, however, that general hospitals were still called upon to deal with them. The establishment of neurological departments in these hospitals partly met the situation until additional special hospitals could be provided. The second such hospital was secured by using a detached portion of Middlesex County Asylum in London. This hospital, accommodating 278 additional patients, was renamed the Springfield War Hospital. The foresight of Sir Alfred Keogh and his advisors thus enabled England to make provision for these cases in special military hospitals at an early period in the war.

With more than one hospital available it was possible to make different provisions for different classes of patients suffering from war neuroses. A clearing hospital was therefore established early in 1915 at the Fourth London Territorial General Hospital. The Maudsley Hospital, a psychopathic hospital for the County of London, was nearing completion at this time and, as it adjoined the Kings College Hospital, which formed the larger part of the Fourth London Hospital, it was utilized as a nucleus for this clearing station. The Maudsley Hospital accommodates 175 men and 20 officers; the neurological section—"the Maudsley extension"—accommodates 450 men and 80 officers. Thus, by the spring of 1915 England was provided with a clearing hospital for war neuroses and two special institutions for their continued care. Notwithstanding this provision, by far the greater number of cases were cared for in general hospitals in England and no special provision for continued treatment existed in France. The disadvantages of attempting to treat functional nervous disorders in general hospitals was very apparent, and so neurological sections were established in territorial general hospitals in England, Scotland, and Wales, and in the Royal Victoria Hospital at Netley. Other special hospitals have been provided since. * * *

When the submarines began sinking hospital ships indiscriminately last year, a great deal of the medical work previously done in England was undertaken in France and so special provisions for functional nervous cases were made at Havre, Ireport, Boulogne, Rouen, and Etaples. Formerly little more than establishing the diagnosis was done in France. It is likely that the work of caring for these cases will be turned over more and more to the special hospitals in France, as the results of treatment there have been, on the whole, much more successful than in home territory.

A recent extension of treatment is that of providing care nearer the front. The striking results obtained in casualty clearing stations and similar advanced posts in the French Sanitary Service (*postes de chirurgie d'urgence*) are confirmed by many observers.

Capt. William Brown, a psychiatrist who has recently had the opportunity of working in a casualty clearing station of the British Expeditionary Forces, reports that of 200 nervous and mental cases which passed through his hands in December, 1916, 34 per cent were evacuated to the base after seven days' treatment and 66 per cent returned to duty on the firing line after the same average period of treatment. Four of these cases reappeared at the same casualty clearing station.

Capt. Louis Casamajor, of the United States Army, neurologist to Base Hospital No. 1, British Expeditionary Force, says in a recent letter: "It is a mistake to send these cases to England. We need an intermediate step between the general hospital and the convalescent camp. Of course, they never should get into general hospitals at all, but should be sent from casualty clearing stations direct to neuropsychiatric hospitals. * * * I hope our army will have a psychiatrist in each casualty clearing station to weed these cases out and send them to their proper places, and not have them knock around from one general hospital to another, being pampered into hard-set neuroses."

Leri, working in the neuropsychiatric center of the Second French Army, reports that 91 per cent of the cases received from July to October, 1916, were returned to the fighting line. Marie reports that the neuroses are less frequently met with in Paris, now that they are treated immediately upon their appearance in the army neuropsychiatric centers.¹

Maj. Frederick W. Mott says: "I regard this matter of preventing the fixation of a functional paralysis as of supreme importance both in respect to the welfare of the individual and from the economic point of view of the state."

Roussy and Boisseau², describing the work of an army neuropsychiatric center, say: "The results obtained after six months show that a neuropsychiatric center can render incontestable services to an army both from a medical and a military point of view. For functional nervous cases it avoids sojourns (more dangerous the more they are prolonged) in the hospitals at the rear where these patients are generally lost. It allows of the treatment of other nervous or mental cases that are quickly curable and the direct evacuation to the special centers in the interior of those more seriously affected."

General principles.—Methods of treatment employed in different special hospitals are described in Appendix III. With so much about the war neuroses the subject of controversy, it is not surprising that different methods of treatment have come into existence. The Royal Army Medical Corps has seen fit to leave these matters largely to the specialists in charge of the different hospitals and so the treatment in each reflects, to a certain degree, the conception of the nature of war neuroses held by the medical officer in charge. Certain general principles regarding treatment may be stated.

The experience of the British "shell-shock hospitals" emphasizes the fact that the treatment of the war neuroses is essentially a problem in psychological medicine. While patients with severe symptoms of long duration recover in the hands of physicians who see but dimly the mechanism of their disease and are unaware of the means by which recovery actually takes place, no credit belongs to the physician in such cases and but little to the type of environment provided. In the great majority of instances the completeness, promptness, and durability of recovery depend upon the insight shown by the medical officers under whose charge the soldiers come and their resourcefulness and skill in applying treatment.

The first step in treatment is a careful study of the individual case. There are no specific formulæ for the cure of mutism, paralyses, or tremors or other manifestations of war neuroses. These are symptoms of the disorders and the patient must be treated as well as his symptoms. As in all other psychiatric work, efforts must first be made to gain an understanding of the personality—the fabric of the individual in whom the neurosis has developed. His resources and limitations in mental adaptation will determine in a large measure, the specific line of management. The military situation is most striking, but the problem which life in general presents to the individual and the type of adaptation which he has found serviceable in other emergencies are of as much importance as the specific causes for failure in the existing situation. The disorder must be looked at as a whole. The incident which seems to have precipitated the neurosis—whether shell explosion, burial, or disciplinary crisis—must receive close attention but not to the exclusion of other factors less dramatic but often more potent in the production of the neurosis. It has often been said that some of the symptoms of hysteria are the work of the physician and are created—not disclosed—by neurological examinations. This is apparently true, but the question whether analgesia can exist until the pinprick demonstrates it is somewhat like the question whether sound can exist without an ear to receive it. It is not only true but a fact of great practical importance that a skillful, searching, psychological examination often constitutes the first step in actual treatment.

In the analysis of the situation, as well as in the subsequent management of the patient, the medical officer's attitude is of much importance. He must be immune to surprise or chagrin. Although understanding sympathy is nearly as useful as misdirected sympathy is harmful, he must always remain in firm control.

¹ *Revue-Neurologique* (November-December, 1916).

² *Paris medicale*, 1:14-20 (Jan. 1, 1916).

The resources at the disposal of the physician in treating the war neuroses are varied. The patient must be reeducated in will, thought, feeling, and function. Persuasion, a powerful resource, may be employed directly backed by knowledge on the part of the patient as well as the physician of the mechanism of the particular disorder present. Indirectly, it must pervade the atmosphere of the special ward or hospital for "shell shock." Hypnotism is valuable as an adjunct to persuasion and as a means of convincing the patient that no organic disease or injury is responsible for his loss of function. Thus in mutism the patient speaks under hypnosis or through hypnotic suggestion and thereafter must admit the integrity of his organs of speech. The striking results of hypnotism in the removal of symptoms are somewhat offset by the fact that the most suggestible who yield to it most readily are particularly likely to be the constitutionally neurotic. In such cases we are using to bring about a cure, a mental mechanism similar to that which produced the disorder.

Recovery within the sound of artillery or at least "somewhere in France" is more prompt and durable than that which takes place in England. For severe cases and those which through mismanagement have developed the unfortunate secondary symptoms of "shell shock" and in whom long continued treatment is necessary, a rural place is best.

Reeducation by physical means is a valuable adjunct to treatment in recent cases, but particularly in chronic cases who have been mismanaged and in those who are recovering from long-continued paralyses, ties, mutism, and gait disorders. While drills and physical exercises have their specific uses, occupation is the best means. Nonproductive occupations should be avoided.

Occupations are conveniently classified as:

1. Bed.
2. Indoor.
3. Outdoor.

1. Basket making and net making are good bed occupations for cases with extensive paralyses, as are making surgical dressings and various minor finishing operations (sand-papery, polishing, etc.) on products of the shops. All occupations, and especially those which are carried on by patients seriously incapacitated, should be regarded as only steps in a process of progressive education. Every effort must be made to prevent skill acquired in them from being considered as a substitute for full functional activity. Herein is an important difference between the "reeducation" of neurotic and orthopedic cases. In the latter the purpose is often to make the remaining sound limb take on the functions of one which is missing or permanently disabled. The function held in abeyance through neurotic symptoms must never be looked upon as lost. It can and must be restored, and if another function is developed as its surrogate the day of full recovery is thereby postponed. Bed occupations, therefore, must always be regarded as the first steps in a series which is to culminate in full activity. Progress through achievements constantly more difficult is the keynote of reeducation in the war neuroses.

2. A wide variety of indoor occupations should be provided, including at the minimum, carpentry, wood carving, metal work, and cement work. Printing, bookbinding, cigarette making, electric wiring, and other work should be added as opportunities permit.

3. Farming, gardening, and building operations are desirable outdoor occupations. Where possible, wood sawing and chopping are very desirable, as is the care of stock not requiring much land (squabs, guinea pigs, rabbits, game, and frogs).

Before even the simplest occupation can be engaged in it is sometimes necessary to reeducate paraplegics and ataxics in walking and coordination. Just as soon as possible exercises should be replaced by productive occupations which will accomplish the same results more quickly and more satisfactorily. The same is true of gymnastic exercises, which in the early steps of treatment constitute a valuable resource but which should be replaced by specially devised useful tasks. Swimming has a unique place in the treatment of gait disturbances, paralysis, and ties. One of the first pieces of construction undertaken by the outdoor patients at a reconstruction center should be that of building a large concrete swimming tank.

Hydrotherapy and electrotherapy have a distinct value when they are applied with absolute sincerity and full realization on the part of patient and medical officer of the rôle which they actually play in the treatment of functional nervous diseases.

The experience in English hospitals has demonstrated the great danger of aimless lounging, too many entertainments, and relaxing recreations such as frequent motor rides, etc. It must be remembered that "shell-shock" cases suffer from a disorder of will as well as function and it is impossible to effect a cure if attention is directed to one at the expense of the other. As Dr. H. Crichton Miller has put it, "shell shock produces a condition which is essentially childish and infantile in its nature. Rest in bed and simple encouragement is not enough to educate a child. Progressive daily achievement is the only way whereby manhood and self-respect can be regained."

OUTCOME

It was impossible for me to discover the end results of treatment. The following table shows the disposal of 731 discharges from the Red Cross Military Hospital at Maghull during the year ending June 30, 1917:

	Number	Per cent
To military duty.....	153	20.9
To civil life.....	476	65.1
To other hospitals.....	88	12.0
To civil institutions for the insane.....	7	1.0
Died.....	3	.4
Deserted.....	4	.6
Total.....	731	100.0

It is the opinion of the commanding officer of this hospital that few men (of the severe or chronic type there received) can be sent back to military duty at the front. More could be returned to duty at the base but for the fact that after having been in a "shell-shock hospital" they are regarded as being poor material, and little effort is taken to train them for their new duties. Under such conditions the men become discouraged and soon show signs of relapse. Those discharged to civil life have done satisfactorily, as might be expected when one bears in mind the genesis of the neuroses in war.

At the Granville Canadian Special Hospital, at Ramsgate, upward of 60 per cent of the patients admitted were returned to the front. The experience of this hospital is of special value to us because the cases treated are those which seem likely to recover within six months. All others and those who do not improve quickly at Ramsgate are sent to Canada. It would be wise for the United States Army to adopt a similar policy.

In the special wards established in France the recoveries are still more numerous.

It is evident that the outcome in the war neuroses is good from a medical point of view and poor from a military point of view. It is the opinion of all those consulted that with the end of the war most cases, even the most severe, will speedily recover, those who fail to being the constitutionally neurotic and patients who have been so badly managed that very unfavorable habit reactions have developed. This cheering fact brings little consolation, however, to those who are chiefly concerned with the wastage of fighting men. The lesson to be learned from the British results seems clear—that treatment by medical officers with special training in psychiatry should be made available just as near the front as military exigency will permit and that patients who can not be reached at this point should be treated in special hospitals in France until it is apparent that they can not be returned to the firing lines. As soon as this fact is established, military needs and humanitarian ends coincide. Patients should then be sent home as soon as possible. The military commander may have the satisfaction of knowing that food need not be brought across to feed a soldier who can render no useful military service, and the medical officer may feel that his patient will have what he most needs for his recovery—home and safety and an environment in which he can readjust.

Looking at the matter from a military point of view alone, one might ask whether it is not desirable to send home all "shell-shock" cases, in whom so much effort results in so few recoveries. Such a decision would be as unfortunate from a military as from a humanitarian standpoint. Its immediate effect would be to increase enormously the prevalence of the

war neuroses. In the unending conflict between duty, honor, and discipline, on the one hand, and homesickness, horror, and the urgings of the instinct of self-preservation on the other, the neurosis, as a way out, is already accessible enough in most men without calling attention to it by the adoption of such an administrative policy.

MEDICO-LEGAL RELATIONS

The sudden appearance of marked incapacity without signs of injury in a group of men to whom invalidism means a sudden transition from extreme danger and hardship to safety and comfort quite naturally gives rise to the suspicion of malingering. The general knowledge among troops of the more common symptoms of "shell shock" and of the fact that thousands of their comrades suffering from it have been discharged from the Army suggests its simulation to men who are planning an easy exit from military service by feigning disease. It is therefore of much military importance that medical officers be not deceived by such frauds. On the other hand, especially before the clinical characters and remarkable prevalence of war neuroses among soldiers had become familiar facts, not a few soldiers suffering from these disorders have been executed by firing squads as malingerers. Instances are also known where hysterics have committed suicide after having been falsely accused of malingering. Mistakes of this kind are especially liable to occur when the patients have not been actually exposed to shell fire on account of the idea so firmly fixed in the minds of most line officers and some medical men that the war neuroses are due to mechanical shock.

The diagnosis between neuroses and malingering may sometimes be extremely difficult but usually it is easy when the examiner is familiar with both conditions. The difficulties arise from the fact that in both a disease or a symptom is simulated. As Bonnal says, "The hysteric is a malingerer who does not lie." The cardinal point of difference is that the malingerer simulates a disease or a symptom which he has not in order to deceive others. He does this consciously to attain, through fraud, a specific selfish end—usually safety in a hospital or discharge from the military service. He lies, and knows that he lies. The hysteric deceives himself by a mechanism of which he is unaware and which is beyond his power consciously to control. He is usually not aware of the precise purpose which his illness serves. This is shown by the fact that, in many cases, all that is necessary for recovery is to demonstrate clearly to the patient the mechanism by which this disability occurred and the unworthy end to which, unconsciously, it was directed.

There are a number of distinctive points of difference between hysteria and malingering, two of which it may be interesting to mention:

1. The malingerer, conscious of his fraudulent intent and fearful of its detection, dreads examinations. The hysteric invites examinations, as is well known to physicians in civil practice. When he has the opportunity he makes the rounds of clinics and physicians, especially delighting in examinations by noted specialists.

2. The hysteric, in addition to the symptoms of which he complains, often presents objective symptoms of which he is unaware. The malingerer, unless of low intelligence, confines his complaints to the disease or symptom which he has decided to stimulate.

Malingering may follow or prolong a neurosis. This is not infrequently the case when mutism is succeeded by aphonia. In such cases the clinical picture presents changes very apparent to the experienced psychiatrist but it must be remembered that malingerers (like criminals in civil life) are often very neuropathic individuals.

The gravity of malingering as a military offense in an army in the field justifies the recommendation that no case in which the possibility of a neurosis or psychosis exists shall be finally dealt with until the subject is examined by a neurologist or psychiatrist. If neuropsychiatric wards are provided in base hospitals in France as well as in the United States, such an examination will be feasible in practically all cases without causing undue delay. The knowledge that malingerers are subjected to such expert examination will tend to discourage soldiers from this practice.

RECOMMENDATIONS FOR THE UNITED STATES ARMY

The following recommendations for the treatment of mental diseases and war neuroses ("shell shock") in United States troops are based chiefly upon the experience of the British Army in dealing with these disorders, as outlined in the foregoing report. The advice of British medical officers engaged in this special work has aided greatly in formulating the plans presented. At the same time conditions imposed by the necessity of conducting our military operations 3,000 miles away from home territory have been borne in mind.

It seems desirable to consider separately, in these recommendations, expeditionary and nonexpeditionary forces. It is necessary to deal separately with mental and nervous diseases in the United States but not in France. While facilities existing at home can be utilized for the treatment of mental diseases it is necessary to create new ones for the treatment of the war neuroses. In France, where all facilities for treatment must be created by the medical department, the distinction between psychoses and neuroses need not be drawn so closely. Consequently simpler and more effective methods of administrative management can be devised.

The importance of providing, in advance of their urgent need, adequate facilities for the treatment and management of nervous and mental disorders can hardly be overstated. The European countries at war had made practically no such preparations and they fell into difficulties from which they are now only commencing to extricate themselves. We can profit by their experience and, if we choose, have at our disposal, before we begin to sustain these types of casualties in very large numbers, a personnel of specially trained medical officers, nurses, and civilian assistants and an efficient mechanism for treating mental and nervous disorders in France, evacuating them to home territory and continuing their treatment, when necessary, in the United States.

Although it might be considered more appropriately under the heading of prevention than under that of treatment, the most important recommendation to be made is that of rigidly excluding insane, feeble-minded, psychopathic, and neuropathic individuals from the forces which are to be sent to France and exposed to the terrific stress of modern war. Not only the medical officers but the line officers interviewed in England emphasized over and over again the importance of not accepting mentally unstable recruits for military service at the front. If the period of training at the concentration camps is used for observation and examination it is within our power to reduce very materially the difficult problem of caring for mental and nervous cases in France, increase the military efficiency of the expeditionary forces, and save the country millions of dollars in pensions. Sir William Osler, who has had a large experience in the selection of recruits for the British Army and has seen the disastrous results of carelessness in this respect, feels so strongly on the subject that he has recently made his views known in a letter to the *Journal of the American Medical Association*¹ in which he mentions neuropathic make-up as one of the three great causes for the invariable rejection of recruits. In personal conversation he gave numerous illustrations of the burden which the acceptance of neurotic recruits had unnecessarily thrown upon an army struggling to surmount the difficult medical problems inseparable from the war.

It is most convenient to summarize the recommendations as follows and then to discuss each one somewhat in detail:

SUMMARY OF RECOMMENDATIONS FOR THE CARE AND TREATMENT OF MENTAL DISEASES AND WAR NEUROSES ("SHELL SHOCK") IN THE EXPEDITIONARY FORCES

OVERSEAS

1. *Base section of line of communications.*—(a) A special base hospital of 500 beds for neuropsychiatric cases, located at the base upon which each army (of 500,000–600,000) rests. These special base hospitals to be used for cases likely to recover and return to active duty within six months. Other cases to be cared for while waiting to be evacuated to the United States.

(b) One or more special convalescent camps in connection with (and conducted as part of) each special base hospital.

¹ *Journal American Medical Association*, Vol. LIX, No. 4, p. 290 (July 28, 1917).

2. *Advanced section of line of communications.*—(a) Special neuropsychiatric wards of 30 beds in charge of three psychiatrists and neurologists for each base hospital having an active service. These wards to be used for observation (including medicolegal cases) and for emergency treatment of mental and nervous cases.

(b) Detail of a psychiatrist or neurologist attached to the neuropsychiatric wards of base hospitals to evacuation hospitals or stations further advanced as opportunities permit.

UNITED STATES

1. *Mental (insane).*—(a) One or more clearing hospitals for reception, emergency treatment, classification, and disposition of mental cases among enlisted men invalided home.

(b) Clearing wards (in connection with a general hospital for officers or private institution for mental diseases) for reception, emergency treatment, classification and disposition of mental cases among officers invalided home.

(c) Legislation permitting the Surgeon General to make contracts with public and private hospitals maintaining satisfactory standards of treatment for the continued care of officers and men suffering from mental diseases until recommended for retirement or discharge (with or without pension) by a special board.

(d) Appointment of a special board of three medical officers to visit all institutions in which insane officers and men are cared for under such contracts to see that adequate treatment is being given and to retire or discharge (with or without pension) those not likely to recover.

2. *War neuroses ("shell shock").*—(a) Reconstruction centers (the number and capacity to be determined by the need) for the treatment and reeducation of such cases of war neuroses as are invalided home. Injuries to the brain, cord, and peripheral nerves to be treated elsewhere.

(b) Special convalescent camps where recovered cases can go and not be subject to the harmful influences for those cases which exist in camps for ordinary medical and surgical cases.

(c) Employment of the special board of medical officers, recommended under "1(d)," to visit all reeducation centers and convalescent camps in which war neuroses are treated to see that adequate treatment is being given and to retire or discharge (with or without pension) those not likely to recover.

EXPEDITIONARY FORCES

1. OVERSEAS

The plan herein suggested for dealing with mental and functional nervous diseases in the Expeditionary Forces overseas presupposes that all sick and wounded soldiers who are not likely to be returned for duty in the fighting line within six months will be evacuated to home territory. The same considerations which led to the adoption of this policy by the Canadian Army are equally valid in the case of American troops. If large numbers of the sick and wounded who are not likely to return to active duty have to be cared for in France during long periods of disability, the amount of food and other supplies which must be sent overseas for them and for those who care for them will diminish the tonnage available for the transportation of munitions required for successful military operations. The great auxiliary hospital facilities available in the United States can not be utilized and, in the case of the severe neuroses, fewer recoveries will take place. If submarine activities seriously interfere with the return of disabled soldiers to the United States and it is necessary to provide continued care, chronic cases should be evacuated to special hospitals established in France for this purpose. It is very desirable to maintain an active service in base hospitals that receive cases from the front. This is especially true in the case of the war neuroses.

(a) *Base section of line of communications.*—The base upon which each army rests should be provided with a special base hospital of 500 beds for neuropsychiatric cases. Three years' experience in treating these cases in general hospitals in England and France amply demonstrates the need for such an institution. Few more hopeful cases exist in the medical services

of the countries at war than those suffering from the war neuroses grouped under the term "shell shock" *when treated in special hospitals by physicians and nurses familiar with the nature of functional nervous diseases and with their management.* On the other hand, the general military hospitals and convalescent camps presented no more pathetic picture than the mismanaged nervous and mental cases which crowded their wards before such special hospitals were established. Exposed to misdirected harshness or to equally misdirected sympathy, dealt with at one time as malingerers and at another as sufferers from incurable organic nervous disease, "passed on" from one hospital to another and finally discharged with pensions which can not subsequently be diminished, their treatment has been a sad chapter in military medicine. As one writer has said, "they enter the hospitals as 'shell shock' cases and come out as nervous wrecks." To their initial neurological disability (of a distinctly recoverable nature) are added such secondary effects as unfavorable habit reactions, stereotypy and fixation of symptoms, the self-pity of the confirmed hysteric, the morbid timidity and anxiety of the neurasthenic and the despair of the hypochondriac. In such hospitals and convalescent homes inactivity and aimless lounging weaken will and the attitude of permanent invalidism quickly replaces that of recovery. The provision of special facilities for the treatment of "shell shock" cases is imperative from the point of view of military efficiency as well as from that of common humanity for more than half these cases can be returned to duty if they receive active treatment in special hospitals from an early period in their disease.

British experience indicates that about 100 of the beds in each such special base hospital would be occupied by mental cases and the rest by those suffering from war neuroses. It is not necessary to make this division arbitrarily in advance, however, as both classes of cases can be cared for in the type of hospital to be proposed and redistribution of patients can be made from time to time as circumstances require. It should be the object of these special base hospitals to provide treatment for all cases likely to recover and be returned to active duty within six months. Practically all mental cases, even those who recover during this period, as well as functional nervous cases presenting an unfavorable outlook or which are unimproved by special treatment, should be evacuated to the United States as rapidly as transportation conditions will permit.

Each such hospital should be located with reference to its accessibility to other hospitals along the line of communications of the army which it serves. This will necessitate its being on the main railway line down which disabled soldiers are evacuated from the front. It should also be within convenient reach of although not necessarily at the port of embarkation. If it is possible to secure a site in southern France where outdoor work can be continued during the winter many important advantages will be gained. Gardening and other outdoor occupations are so valuable that the amount of ground adjoining each base hospital, or contiguous to it, should be not less than 1 acre for every 6 patients of one-third its population. Thus, at least 30 acres are required for a hospital with 500 beds.

The type of general hospital adopted by the American Army for cantonment camps could be used, with certain interior changes, but it would be more advantageous to secure a large hotel or school and remodel it to perform the special functions of a hospital of this character. The living arrangements in these special hospitals are simpler than in general hospitals for medical and surgical cases. About 5 per cent of the bed capacity will have to be in single rooms. This percentage will be somewhat greater in the psychiatric division and less in the neurological division. Less than 3 per cent of the population will be bed patients. A sufficient number of rooms in both the neurological and psychiatric divisions should be set aside for officers—the higher proportion of officers among patients with neuroses being taken into consideration in planning this department.

It is necessary to allow liberally for examining rooms, massage, hydrotherapy, and electrotherapy and to provide one large room which can be used for an amusement hall.

When the patients and staff have been suitably housed attention should be directed to the highly important features of shops, industrial equipment, gymnasium, and gardens. If no suitable buildings close to the hospital can be secured, perfectly adequate facilities can be provided in cheaply constructed wooden huts with concrete floors. A gymnasium can be erected more cheaply than an existing building can be adapted for this purpose unless a large storehouse, barn, or factory is available.

Hydrotherapeutic equipment should include continuous baths, Scotch douche, needle baths, and a swimming pool. The latter is exceptionally valuable in the treatment of functional paralyses and disturbances of gait which disappear while patients are swimming, thus often opening the way for rapid recovery by persuasion.

Electrical apparatus is necessary for diagnostic purposes and also for general and local treatment.

Second in importance only to the general psychological control of the situation in functional nervous diseases is the restoration of the lost or impaired functions by reeducation. None of the methods available for reeducation are so valuable in the war neuroses as those in which a useful occupation is employed as the means for training. Reeducation should commence as soon as the patient is received. Thought, will, feeling, and function have all to be restored, and work toward all these ends should be undertaken simultaneously. Non-productive occupations are not only useless but deleterious. The principle of "learning by doing" should guide all reeducative work. Continual "resting," long periods spent alone, general softening of the environment, and occupations undertaken simply because the mood of the patient suggests them are positively harmful, as shown by the poor results obtained in these general hospitals and convalescent homes in which such measures are employed.

The industrial equipment needed is relatively simple and inexpensive. It is very desirable to begin with a few absolutely necessary things and to add those made by the patients themselves. When this is done every piece of apparatus is invested, in the eyes of the patients, with the spirit of achievement through persistent effort—the very keynote of treatment. The fact that it has been made by patients recovering from neuroses will help hundreds of subsequent patients through the force of hopeful suggestion. The following list gives the equipment for the shops which is necessary at the beginning:

Smiths' shop:

Forges, tools, etc., for 10 men.

Fitting shop:

One screw-cutting lathe; 1 sensitive drill; 1 polishing machine; 1 electric motor, 1½ horsepower; swages; and tools for 8 men.

Leather blocking room:

Sewing machine; eyeletting machine; tank; galvanized iron; and tools.

Tailors' shop:

Three Singer machines, tools for 10 men.

Carpenters' shop:

Selected tools for 15 men, bench screws and special tools not for general use, wood-turner's lathe.

Machine shop:

Electric motor, 8½ horsepower, with shafting, brackets, etc.

Cement shop:

Metal molds, tools for 12 men.

Printing shop:

Press and accessories.

General:

Drilling machine, grindstone, screw-cutting lathe, fret-saw workers' machine and patterns, circular-saw bench.

Practically all gymnasium apparatus can be made in the shops after the hospital is opened.

Each special base hospital should be able to evacuate patients who, although not quite able to return to active duty, no longer require intensive treatment. For this purpose one or more convalescent camps within convenient distance by motor truck from the main institution should be established. Each of these convalescent camps should not exceed 100 in capacity. It will require only 1 medical officer, 1 sergeant, 3 female nurses, an instructor, and 3 or 4 Hospital Corps men, as the patients will be able to care for themselves and in a short time return to duty.

One camp may have to be established for the care of another type of cases. It is conceivable that submarine activity will interfere so seriously with the evacuation of chronic and nonrecoverable cases to the United States that the special hospital will be overcrowded.

Overcrowding will instantly interfere with the success of the work and this will simply mean that men who otherwise might recover and return to military duty at the front will fail to do so. Such a calamity can be averted by transferring chronic and nonrecoverable cases to a camp organized upon quite simple lines under direct control of the main hospital and near enough to utilize its therapeutic resources. The beds which such patients would otherwise occupy in the special base hospital can be made available for the use of fresh, recoverable cases. Such developments might better be made naturally as circumstances require than provided for by any formal arrangements made in advance.

Each base hospital should have the personnel enumerated in the following table:

PERSONNEL FOR SPECIAL BASE HOSPITAL FOR NEUROPSYCHIATRIC CASES

COMMISSIONED OFFICERS

Major.....	M. C.....	Commanding officer.
Captain.....	M. C.....	Adjutant, surgeon of the command, recruiting officer.
Captain.....	Q. M. C....	Quartermaster.
Major.....	M. R. C....	Director.
Major.....	M. R. C....	Chief neurological division.
Major.....	M. R. C....	Chief psychiatric division.
Major.....	M. R. C....	Chief occupational division.
Captain.....	M. R. C....	Pathologist.
Captain.....	M. R. C....	In charge of convalescent camp.
Captain.....	M. R. C....	In charge of electrotherapy and hydrotherapy.
Captain.....	M. R. C....	Ward physician (in charge of transportation of patients.)
Captain.....	M. R. C....	Ward physician.
Captain.....	M. R. C....	Ward physician.
First lieutenant.....	M. R. C....	Ward physician.
First lieutenant.....	M. R. C....	Ward physician.
First lieutenant.....	M. R. C....	Ward physician.
First lieutenant.....	M. R. C....	Ward physician.
First lieutenant.....	M. R. C....	Ward physician.
First lieutenant.....	San. C.....	Psychologist.
First lieutenant.....	San. C.....	Registrar.

NONCOMMISSIONED OFFICERS

Sergeant, 1st class.....	H. C.....	General supervision.
Sergeant, 1st class.....	Q. M. C....	Quartermaster sergeant.
Sergeant, 1st class.....	H. C.....	Office.
Sergeant, 1st class.....	H. C.....	In charge of detachment and detachment accounts.
Sergeant, 1st class.....	H. C.....	In charge of mess and kitchen.
Sergeant, 1st class.....	H. C.....	General supervision, convalescent camp.
Sergeant, 1st class.....	H. C.....	In charge of shops.
Sergeant, 1st class.....	H. C.....	In charge of garden and grounds
Sergeant.....	H. C.....	Hydrotherapy rooms.
Sergeant.....	H. C.....	Electrotherapy rooms.
Sergeant.....	H. C.....	Massage rooms.
Sergeant.....	H. C.....	Shops.
Sergeant.....	H. C.....	Gymnasium.
Sergeant.....	H. C.....	Mess and kitchen.
Sergeant.....	H. C.....	Storerooms.
Sergeant.....	H. C.....	Office.
Sergeant.....	H. C.....	Office.
Sergeant.....	H. C.....	Outside police.
Sergeant.....	H. C.....	Wards.
Sergeant.....	H. C.....	Wards.

Sergeant.....	H. C.....	Wards.
Sergeant.....	H. C.....	Wards.
Sergeant.....	H. C.....	Wards.
Sergeant.....	H. C.....	Transportation of patients.

FEMALE NURSES (N. C.)

Chief nurse.....	1
Assistant to chief nurse.....	1
Dietist.....	1
Ward nurses.....	43
	<hr/> 46

ENLISTED MEN (H. C.)

14 acting cooks.

115 privates, 1st class, and privates, distributed as follows:

Ward attendants—

Neurological division.....	22
Psychiatrial division.....	26
Convalescent camp.....	4
	<hr/> 52
Shops.....	10
Electrotherapy rooms.....	4
Hydrotherapy rooms.....	4
Massage rooms.....	6
Laboratory.....	2
Kitchens and mess.....	14
Office.....	5
Storerooms.....	6
Orderlies.....	4
Outside Police.....	4
Supernumeraries.....	4
	<hr/> 115

CIVILIAN EMPLOYEES

Instructors:

Outdoor occupations.....	1
Indoor occupations.....	1
	<hr/> 2

Assistant instructors:

Carpentry and wood carving.....	1
Cement work.....	1
Metal work.....	1
Leather work.....	1
Gardening.....	1
Printing.....	1
Gymnasium.....	2
	<hr/> 8

Stenographers.....	4
Photographer.....	1
Laboratory technician.....	11
	<hr/> 16

RECAPITULATION

Commissioned officers.....	19
Noncommissioned officers.....	24
Female nurses.....	46
Enlisted men.....	129
Civilian employees.....	16
	<hr/>
	234

The commissioned medical officers should all be men with excellent training in neurology and psychiatry. The neurologists should have a psychiatric outlook and the psychiatrists should be familiar with neurological technique. Of importance almost equal to the professional qualifications of these officers is their character and tact, and no man who is unable to adjust his personal problems should be selected for this work. There is no place in such a hospital for a "queer," disgruntled or irritable individual except as a patient. Men who are strong, forceful, patient, tactful, and sympathetic are required. It is better to permit a medical officer not having these qualifications to remain at home than to assign him to one of these hospitals and allow him to interfere with treatment by his failure to establish and maintain proper contact with his patients. The resources to be employed include psychological analysis, persuasion, sympathy, discipline, hypnotism, ridicule, encouragement, and severity. All are dangerous or useless in the hands of the inexperienced, as the records of "shell shock" cases treated in general hospital testify. In the hands of men capable of forming a correct estimate of the make-up of each patient and of employing these resources with reference to therapeutic problem presented by each case, they are powerful aids.

The female nurses should have had experience in the treatment of mental and nervous diseases. Character and personality are as important in nurses as in medical officers. A large proportion of college women will be found advantageous.

The enlisted men who perform the duties of ward attendants and assistants in the shops, gardens, and gymnasium should include a considerable number of those who have had experience in dealing with mental and nervous diseases. The civilian employees who act as instructors should all have had practical experience in the use of occupations in the treatment of nervous and mental diseases. The instructor for bed occupations should be a woman and she should train the female nurses to assist her in this kind of work.

No work is more exacting than that which will fall to the physicians and chief lay employees in such a hospital. Success in treatment depends chiefly upon each person's establishing and maintaining a sincere belief in the work to which he or she is assigned. No hysterical case must be regarded as hopeless. The maintenance of a correct attitude and constant cooperation between physicians, nurses, instructors, and men in the face of the tremendous demands which neurotic patients make upon the patience and resourcefulness of those treating them soon brings weariness and loss of interest if opportunities for recreation do not exist. Therefore, it should be the duty of the director to see that the morale and good spirits of all are kept up. His recommendations as to the transfer to other military duties of medical officers, nurses, instructors, or men who prove unsuited for this work should be acted upon whenever possible by the chief surgeon under whom the hospital serves. A man or a woman may prove unadapted to this work and yet be a valuable member of the staff of another kind of hospital. This subject is mentioned so particularly because of its great importance. The type of personnel will determine the success of this hospital and hence its usefulness to the Army in a measure which is unknown in other military hospitals. It does not greatly matter whether the operating surgeon understands the personality of the soldier upon whom he is operating or not. Whether or not the physician treating a case of "shell shock" understands the personality of his patient spells success or failure.

The first special base hospital established for neuropsychiatric cases should have such a highly efficient personnel that it will be able to contribute one-third of its medical officers and trained workers to the next similar base hospital to be established, filling their places from those on its reserve list. This should be repeated a second time if necessary and thus a uniform standard of excellence and the same general approach to problems of treatment assured in each special base hospital organized in France.

(b) *Advanced section of line of communications.*—The French and the British experience shows the great desirability of instituting treatment of "shell shock" cases as early as possible. So little has been done as yet in this direction that we do not know much about the onset of these cases and just what happens during the first few days. Such information has been contributed, however, by the few neurologists and psychiatrists who have had an opportunity of working in casualty clearing stations or positions even nearer the front indicates that much can be done in dealing with these cases if they can be treated within a few hours after the onset of severe nervous symptoms. There are data to show that even by the time these cases are received at base hospitals additions have been made to the initial neurological disability and a coloring of invalidism given which frequently influences the prospects of recovery. It is desirable, therefore, to provide neuropsychiatric wards for selected base hospitals in the advanced section of the line of communications. Other base hospitals can send cases to those which possess such wards. The plan of providing such sections, in charge of neurologists and psychiatrists, for divisional base hospitals in the cantonment camps in the United States has been adopted by the Surgeon General. If it is found practicable to make similar provisions in France, these units can accompany the divisions to which they are attached when they join the Expeditionary Forces in the spring of 1918. In the meantime it is essential that each base hospital should have on its staff a neurologist or a psychiatrist. Provision for the care of mental and nervous cases nearer the front, along the line of communications, can best be developed after the first special base hospital for neuropsychiatric cases has been established by detaching from its staff individual officers as actual circumstances require.

It is undesirable to formulate plans for providing this kind of care still nearer the fighting line until a more careful study has been made of the results obtained by the English and French medical services in this undertaking.

2. IN THE UNITED STATES

(a) *Mental diseases (insanity).*—If the policy is adopted of caring in France for mental cases likely to recover and evacuating all others to the United States at once or at the expiration of six months' treatment, we may expect to receive at the port of arrival in the United States not less than 250 insane soldiers per month from an expeditionary force of 1,000,000. We may assume that a plan will be adopted for the reception and the distribution of soldiers invalided from France such as proposed by Major Bailey.

Well-organized facilities for dealing with mental disease exist in the United States which can be utilized by the Government without the necessity of creating expensive new agencies. It is obvious that the first facts to be determined in the case of soldiers reaching the United States while still suffering from mental disorders or who have been invalided home after recovery from acute attacks, are:

1. The cause of the disorder, with special reference to military service.
2. The probable outcome.
3. The probable duration.
4. The special needs in treatment.

It is quite impossible to ascertain any of these facts by casual examination and so it will be necessary to provide "clearing hospitals" for noncommissioned officers and enlisted men where patients may be received and studied upon their arrival with the view of determining these questions. With an average annual admission rate of 3,000 patients, a clearing hospital of 300 beds would permit an average period of treatment of 36 days. This would seem to be sufficient as the Boston Psychopathic Hospital, during an average period of treatment of 18 days, not only determines similar questions but provides continued care for a considerable number of recoverable cases. Such clearing hospitals should be established near the port of arrival and should be essentially military hospitals, with directors who are not only well trained in medical duties but familiar with the requirements of military life and with the institutional provisions in the United States that can be utilized for continued treatment.

With such an active service as a clearing hospital will have, the number of medical officers should be not less than 10 and there should be an adequate clerical force to care for

the important administrative matters which would require attention. The organization of civil psychopathic hospitals in this country affords data for determining the proper size of the ward and domestic services.

After a period of observation and treatment the director of such a hospital should be prepared to furnish the special distributing board with information and definite recommendations as to the further disposal of each case.

Some patients will be found at the clearing hospitals to have recovered. Although, as a matter of military policy, these patients will not be available for duty again in France, they are still of military value to the Government. Such soldiers should be returned to duty in the United States by the special distributing board in a category which would prevent them being exposed again in the fighting line but which would indicate precisely the work for which they are suited. We can conceive of many such soldiers who are likely to break down again under the stress of actual fighting but who are quite likely to remain in good health if they are not so exposed. These men will have had valuable military experience and could render efficient service as instructors in training camps or in the performance of other military duties in the United States. Others who have recovered will give evidence of possessing such an unstable or inferior mental make-up that no further military life, even in the United States, is desirable. In such cases recommendations should be made by the directors of the clearing hospitals to the special distributing board to discharge them to their homes, with or without pensions as the circumstances demand.

There will be found others who have not been benefited at all by treatment in France and who suffer from mental disorders with an extremely unfavorable outlook for recovery. When this conclusion seems justified, the directors of the clearing hospitals should recommend these cases for transfer to a suitable public or private institution in the States from which they enlisted and their discharge from the Army, with or without pension as the circumstances demand.

Another group of cases will be made up of those suffering from psychoses which are probably recoverable. It is equally to the advantage of the Army, the community, and the patient that such soldiers be given continued treatment. Facilities for the care of mental diseases vary so greatly in many of the States that neither the Army nor the patients can receive any assurance that proper treatment will be afforded if such soldiers are discharged to the public institution nearest their homes. In such cases the important question of discharge, with or without pension, should be deferred until every facility has been given, during a reasonable period of time, for recovery to take place. It is recommended, therefore, that these cases be retained in the Army until their recovery or until the end of the war and ordered for treatment to State hospitals with which the Secretary of War has made contracts. A Government hospital for the insane would be the most suitable for carrying out such treatment but the present excellent institution in Washington has reached the size of 3,135 beds and can care for few additional military cases. It is highly desirable that the Government should now establish a military hospital for mental diseases for the Army and Navy and permit the Government hospital to devote all its resources to its civil duties. It would be impossible, however, to have such an institution ready within two years. If it were possible to construct such a new Government hospital in shorter time, it would still be necessary to provide for treatment by contract for such an institution would probably have to care for not more than 1,500 military cases during peace. A much larger number are expected during the war.

It is wiser to care for insane soldiers during the war under contract at 10 or 12 first-class hospitals with fully adequate facilities for treatment than to distribute them solely with reference to the location of their homes. This will involve a certain hardship through making it difficult for such men to be visited by their relatives and friends, but it is possible to distribute the contract hospitals over the country in such a way that there would be few cases more than a day's journey from their homes. The primary object is to *insure recovery in all recoverable cases*. This should outweigh all other considerations.

The legislation permitting the Secretary of War to make such contracts should state clearly that they shall be made only with institutions possessing facilities for treatment laid down by the Surgeon General. The contract hospitals should be required to devote an

entire building of approved construction to military cases or to erect temporary structures meeting the necessary requirements for this purpose.

In order that the Army may be able to discharge mental cases cared for under contract promptly upon their recovery or upon ascertaining that recovery is unlikely, it is desirable that a special board of three medical officers should be established to visit the institutions constantly and act as a board of survey. If two medical officers in each contract hospital were appointed in the Medical Reserve Corps and assigned to the duty of caring for Army patients they could serve as members of such a board when convened at their hospital and make it possible for the three general members to cover a good deal more ground. The headquarters of this board should be in the clearing hospital at the principal port of arrival.

Clearing wards for officers should be established to serve the special purposes indicated in the description of the clearing hospital for enlisted men. Such wards should provide for reception classification, and treatment in cases likely to be of short duration. It might be established in connection with a general hospital at the port of arrival or in connection with a very efficient private institution for the insane in which full military control of this department could be secured.

It is equally important to provide for the continued treatment of officers and not leave this question, in which the Army has so great an interest, to chance or geographical convenience. Arrangement similar to those for the continued care of enlisted men in public contract hospitals could easily be made with the best endowed private institutions for the insane, such as Bloomingdale Hospital, White Plains, N. Y.; Butler Hospital, Providence, R. I.; Hartford Retreat, Hartford, Conn.; McLean Hospital, Waverley, Mass.; Sheppard and Enoch Pratt Hospital, Towson, Md.; Henry Phipps Psychiatric Clinic, Baltimore, Md.; and the Pennsylvania Hospital for the Insane, Philadelphia, Pa.

(b) *War neuroses* ("shell shock").—It is not necessary here to outline the organization of reconstruction centers for the treatment of war neuroses in the United States. The general principles in treatment described in the foregoing report and in the plan recommended for France should be a guide in the development of those centers. It might be desirable to follow the plan in the United States which has been so successful in the Granville Canadian Special Hospital at Ramsgate of treating the war neuroses in a center which also cared for orthopedic cases in which peripheral nerve injuries exist. These latter types of patients constitute a very hopeful group of cases and many of the resources for reeducation which are needed in their treatment are equally useful in the cases of hysterical paralyses, tremors, and disturbances of gait. It should be remembered that if the policy recommended of evacuating to the United States only the neuroses which fail to recover in six months in France is adopted some very intractable cases will be received. For the most part these will be patients with a constitutional neuropathic make-up—the type most frequently seen in civil practice. Many of these cases will prove amendable to long continued treatment and much can be expected from the mental effect of return to the United States. It is very important not to fall into the mistake made in England of discharging these severe cases with a pension because of the discouraging results of treatment. To do so will swell the pension list enormously, as can be seen by the fact that 15 per cent of all discharges from the British Army are unrecovered cases of mental diseases and war neuroses. Quite aside from financial considerations, however, is the injustice of turning adrift thousands of young men who developed their nervous disability through military service and who can find in their home towns none of the facilities required for their cure. It is recommended, therefore, that *no soldiers suffering from functional nervous diseases be discharged from the Army until at least a year's special treatment has been given*. Furloughs can be given when visits home or treatment in civil hospitals will be beneficial but the Government should neither evade the responsibility nor surrender the right to direct the care of these cases. A serious social and economic problem has been created in England already through the establishment in its communities of a group of chronic nervous invalids who have been prematurely discharged from the only hospitals existing for the efficient treatment of their illness. So serious is this problem that a special sanitarium—"The House of Recovery"—the first of several to be provided, has been established in London and subsidized by the War Office for the treatment of such cases among pensioners.

It is highly important not to permit convalescent cases of this kind to be cared for in the ordinary type of convalescent camp or home. The surroundings so suitable to conva-

lescents from wounds or other diseases are very harmful to neurotic cases. Here much that has been accomplished in special hospitals by patient, skillful work is undone. Therefore special convalescent camps similar to those recommended for the Expeditionary Forces in France should be established within convenient reach of the reconstruction centers.

The special board, recommended for the final disposition of mental cases, should deal with cases of functional nervous diseases.

NONEXPEDITIONARY FORCES

Facilities for the treatment of neuropsychiatric cases at the camps in the United States have been approved by the Surgeon General and are now being provided. These will undoubtedly prove sufficient for dealing temporarily with mental cases developing in the nonexpeditionary forces. Their final disposition should be made by means of the same mechanism recommended for expeditionary patients who are invalidated home except that the functions of the clearing hospitals for mental diseases can be performed by the neuropsychiatric wards of divisional hospitals and that of the special board by the board of survey composed of the neurologists and psychiatrists stationed at the camps.

Neuroses are very common among soldiers who have never been exposed to shell fire and will undoubtedly be seen frequently among nonexpeditionary troops in this country. In England nearly 30 per cent of all men from the home forces admitted to one general hospital were suffering from various neuroses.¹ Most of these were men of very neurotic make-up. Most of these cases had had previous nervous breakdowns. Fear, even in the comparatively harmless camp exercises, was a common cause of neurotic symptoms. Heart symptoms were exceedingly common. The same experience in our own training camps can be confidently predicted.

The responsibility of the Government in such cases is obviously different from that in soldiers returning from duty abroad. In the neuropsychiatric wards of divisional hospitals the important and difficult question of diagnosis can be well determined. Most such cases should be discharged from the service. Some can be treated at the reconstruction centers for, unfortunately, there are scarcely any provisions in the United States for the treatment of the neuroses except in the case of the rich. It is freely predicted in England that the wide prevalence of the neuroses among soldiers will direct attention to the fact that this kind of illness has been almost wholly ignored while great advances have been made in the treatment of all others. In civil life one still hears of detecting hysteria, as if it were a crime, and although the wounded burglar is carefully and humanely treated in the modern city hospital, the hysteric is usually driven away from its doors. To-day the enormous numbers of these cases among some of Europe's best fighting men is leading to a revision of the medical and popular attitude toward functional nervous diseases.

¹ Burton-Fanning, F. W. Neurasthenia in soldiers of the home forces. *Lancet* (London). 1907-11 (June 16, 1917)

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